

88 00823

# NOISE ELEMENT

Policy Document



INSTITUTE OF GOVERNMENTAL  
STUDIES LIBRARY

MAY 13 1988

UNIVERSITY OF CALIFORNIA

Tulare County Planning And Development Department







**POLICY DOCUMENT**  
**NOISE ELEMENT OF THE**  
**GENERAL PLAN**  
**TULARE COUNTY, CALIFORNIA**

Prepared by  
**TULARE COUNTY PLANNING AND DEVELOPMENT DEPARTMENT**  
Room 111 Courthouse  
Visalia, California 93291

with  
**BROWN-BUNTIN ASSOCIATES, INC.**  
Visalia, California

In Association With  
**QUAD CONSULTANTS**  
Visalia, California

Approved: Tulare County Planning Commission  
Resolution No. 6453, January 13, 1988  
Adopted: Tulare County Board of Supervisors  
Resolution No. 88-0160, February 9, 1988



Digitized by the Internet Archive  
in 2024

<https://archive.org/details/C124893758>

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Purpose and Scope

The Noise Element of the General Plan is a planning document which is intended to provide a policy framework within which potential noise impacts may be addressed in the project review and long range planning processes. It is intended that this Element be the adopted Noise Element of the Tulare County General Plan, in conformance with Section 65302 (f) of the California Government Code.

It is intended that the noise exposure information developed during the preparation of the Noise Element be utilized by Tulare County to implement the requirements of California Administrative Code (CAC) Title 24 by providing a basis for determining where noise-related land use conflicts presently exist or may occur in the future. It is also intended that the noise exposure information developed for the Noise Element be used to provide baseline levels for use in the development and enforcement of a local noise control ordinance should the County determine that adoption of such an ordinance is appropriate at some point. A local noise control ordinance may be used to address noise levels generated by local industrial, commercial, agricultural and residential uses, which are not regulated by federal or state noise level standards. The regulation of noise sources such as traffic on public roadways, railroad operations and aircraft operations is preempted by existing federal and/or state regulations, meaning that such sources generally may not be addressed by a local noise control ordinance.

The Noise Element is a pro-active document which is directed at minimizing future noise conflicts, whereas a noise ordinance is a reactive document which is directed at resolving existing noise conflicts. The adopted policies of the Noise Element should generally be consistent with the noise level standards of a local noise control ordinance (if one is adopted) to achieve consistency in the implementation of noise control programs, and to provide local industry with design criteria for future development or expansion.



According to the Government Code requirements for Noise Elements and to the California Office of Noise Control (ONC) Guidelines, noise exposure information should be developed for the following major noise sources:

1. Highways and freeways
2. Primary arterials and major local streets
3. Railroad operations
4. Aircraft and airport operations
5. Local industrial facilities
6. Other stationary sources

Noise-sensitive areas to be considered during the development of noise exposure information should include areas containing the following noise-sensitive land uses:

1. Residential development
2. Schools
3. Hospitals, Rest homes and Long-term medical or mental care facilities
4. Churches
5. Other uses deemed noise sensitive by the local jurisdiction

## 1.2 Authority

The contents of a Noise Element and the methods used in its preparation have been determined by the requirements of Section 65302 (f) of the California Government Code and by the "Guidelines for the Preparation and Content of Noise Elements of the General Plan" adopted and published by the California Office of Noise Control (ONC) in 1976. The ONC Guidelines require that certain major noise sources and areas containing noise-sensitive land uses be identified and quantified by preparing generalized noise exposure contours for current and projected conditions within the community. Contours may be prepared in terms of either the **Community Noise Equivalent Level (CNEL)** or the **Day-Night Average Level (L<sub>dn</sub>)**, which are descriptors of total noise exposure at a given location for an annual average day. CNEL and L<sub>dn</sub> are generally considered to be equivalent descriptors of the community noise environment within plus or minus 1.0 dB. Appendix A provides an explanation of the acoustical terminology used in this document.

### **1.3 Relationship to Other Elements of the General Plan**

This Noise Element supersedes the previous Noise Element adopted by Tulare County in 1975. In order to provide for an integrated approach to the noise-related aspects of land use compatibility planning countywide, a coordinated approach to implementing the policies of the Noise Element must be carried out by the County. This will be especially important in areas of the County which are located within the urban area boundaries of incorporated cities.

The Noise Element is most related to the Land Use and Circulation Elements of the General Plan. Its relationship to the Land Use Element is direct, in that the implementation of either element has the potential to result in the creation or elimination of noise conflicts between land uses. The Land Use Element and the Noise Element should be consistent in order to discourage the development of incompatible adjacent land uses, thereby preventing impacts upon noise-sensitive uses and encroachment upon existing noise-generating facilities.

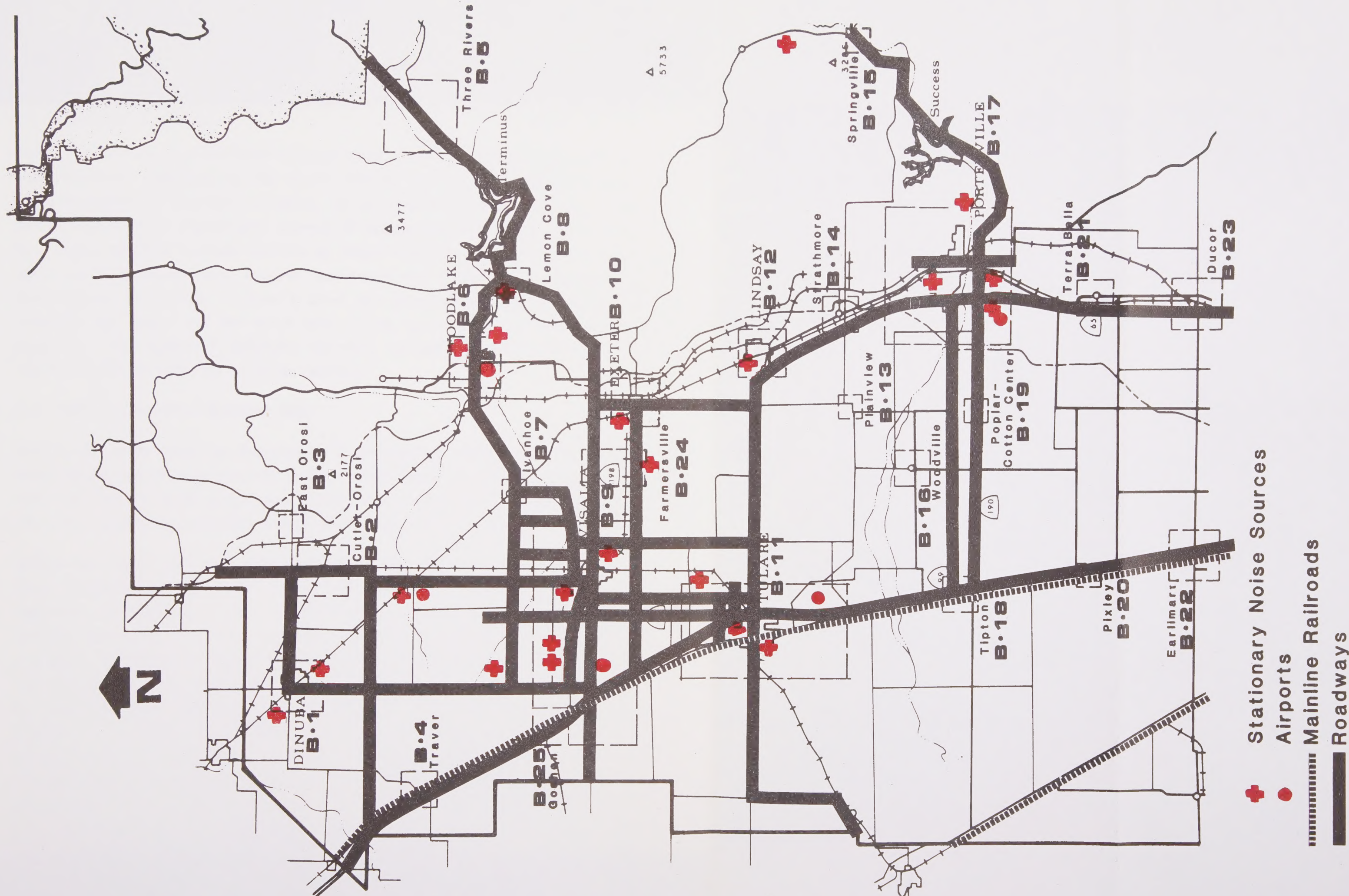
The Circulation Element is linked to the Noise Element in that traffic routing and volume directly affect community noise exposure. For example, increased traffic volume may produce increased noise in a residential area so that noise control measures are required to provide an acceptable noise environment. Similarly, re-routing traffic from a noise-impacted neighborhood may provide significant noise relief to that area.

### **1.4 Noise And Its Effects On People**

A separate Technical Reference Document has been prepared in support of this Noise Element which provides discussions of the fundamentals of noise assessment, the effects of noise on people, criteria for acceptable noise exposure and the techniques available for noise control. It is intended that the Technical Reference Document serve as a reference for Tulare County during the review of documents or proposals which refer to the measurement and effects of noise.













## CHAPTER TWO

### EXISTING AND FUTURE NOISE ENVIRONMENT

#### 2.1 Overview of Sources

Based on discussions with Tulare County staff, on information provided through questionnaires completed by the County and on field studies conducted during the preparation of the Noise Element, it was determined that there are a number of potentially significant sources of community noise within Tulare County. These sources include traffic on State highways and major County roadways, railroad operations, airport operations and industrial, commercial and agricultural activities. Figure 1 shows the locations of major noise sources selected for study, and for which generalized  $L_{dn}$  or CNEL contours have been prepared. The Technical Reference Document includes detailed discussions of the noise levels produced by these sources.

#### 2.2 Methods and Noise Exposure Maps

Analytical noise modeling techniques in conjunction with actual field noise level measurements were used to develop generalized  $L_{dn}$  or CNEL contours for major sources of noise within the incorporated cities and unincorporated areas of Tulare County for existing (1986) and future (2010) conditions.

Analytical noise modeling techniques generally make use of source-specific data, including average levels of activity, hours of operation, seasonal fluctuations, and average levels of noise from source operations. Analytical methods have been developed for many environmental noise sources, including roadways, railroad line operations, railroad yard operations, industrial plant and aircraft/airport operations. Such methods will produce reliable results as long as data inputs and assumptions are valid for the sources being studied. The analytical methods used in the development of this Element closely follow recommendations made by the State Office of Noise Control, and included the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model for roadway sources, the Wyle Laboratories method for determining railroad noise exposure and the Federal Aviation Administration's (FAA) Integrated Noise Model (INM) for the assessment of aircraft/airport noise sources. For industrial, commercial and other stationary sources identified



for study, a combination of source-specific noise level data and accepted calculation procedures was used to characterize noise emissions based upon operational data obtained from source operators. The noise exposure information developed during the preparation of the Noise Element does not include all conceivable sources of industrial, commercial or agricultural noise within the County, but rather is a representative sampling of typical sources. The noise exposure information developed for the sources identified for study should be used only as an indicator of potential noise impacts when other, similar sources are considered.

Noise exposure contours for major sources of noise within Tulare County are contained within Appendix B of this document. It should be noted that these contours are generally based upon annual average conditions (unless otherwise noted), and are intended to be representative of "typical" conditions for the types of noise sources being characterized. It is intended that the noise exposure information presented in Appendix B be used by Tulare County during the project review and long-range planning processes to identify areas which are potentially noise-impacted. It should be noted that site-specific studies would generally indicate that the noise exposure information presented in Appendix B represents a conservative (worst-case) assessment of noise exposure, and that local topographical features, vegetation or intervening buildings may significantly affect noise exposure at a given receiver location.

### **2.3 Community Noise Survey**

As required by the Government Code and ONC Guidelines, a community noise survey was conducted to document noise exposure in areas of the County and the incorporated cities of the County containing noise-sensitive land uses. Noise monitoring sites were selected to be representative of typical conditions in areas where noise-sensitive land uses are located. A total of 70 monitoring sites were selected, as shown in Figure 2. A combination of short-term and continuous noise monitoring was used to document existing noise levels at these locations during the month of November, 1986. At 60 of the community noise survey sites, noise levels were sampled for approximately 15 minutes during each of three periods of the day and night so that reliable estimates of  $L_{dn}$  could be prepared. The data collected during the short-term sampling program included the  $L_{eq}$ , maximum noise level, minimum noise level and a



description of noise sources which were audible at the monitoring sites. Continuous noise monitoring was conducted at 10 of the community noise survey sites to document fluctuations in noise levels over a typical 24-hour period in areas which are representative of the different types of noise environments within the County (urban, small town, rural area, mountain area, etc.). Noise level data collected during continuous monitoring included the  $L_{eq}$ , maximum noise level, and the statistical distribution of noise levels for each hour of the sample period. The hourly fluctuations of noise levels at the sites where continuous noise monitoring was conducted are depicted in graphic form in the Technical Reference Document. Noise level data collected during the community noise survey are summarized in Table I.

The community noise survey results indicate that noise levels in areas containing noise-sensitive land uses in the incorporated and unincorporated areas of Tulare County ranged from 29 to 65 dB  $L_{dn}$ . As would be expected, the quietest areas were those which are removed from major transportation-related noise sources and local industrial or other major stationary noise sources. Good examples of these quiet areas are rural valley and mountain residential areas such as Alpaugh, Springville, Panorama Heights, Johnsondale and Ponderosa and recreational areas such as Balch Park. It is anticipated that noise levels in recreational areas would be somewhat higher than measured during the survey during the summer season, when such areas receive greater use. The noisier locations monitored during the survey were in areas located near State highways and major County roadways (Pixley, Earlimart, etc.) or major industrial noise sources (Lindsay, Site #6). Noise levels in some areas were higher than would normally be expected, such as in the rural area near Pixley Site #63), where cotton picking machines were in use during the survey period. Maximum noise levels observed during the survey were generally caused by local automobile traffic or heavy trucks. Other sources of maximum noise levels included occasional aircraft overflights, railroad operations, barking dogs and nearby industrial, commercial and agricultural equipment or machinery. Background noise levels in the absence of the above-described sources were caused by distant traffic, wind in the trees, running water, birds and distant agricultural, industrial or other stationary noise sources.

In the foothill and mountain areas of Tulare County, background noise levels are generally very low. Exceptions to this occur near major roadways or along rivers or streams where running water may be a significant source of sound. One factor that is difficult to quantify, but is often mentioned by persons who reside in rural or mountain areas, is the greater expectation for a quiet living environment by persons who have made the choice to live away from urbanized areas. This factor, coupled with the quiet existing background noise levels, greatly increases the likelihood that noise from a new noise-generating land use will be perceived by residents of these areas as a significant intrusion over existing conditions.



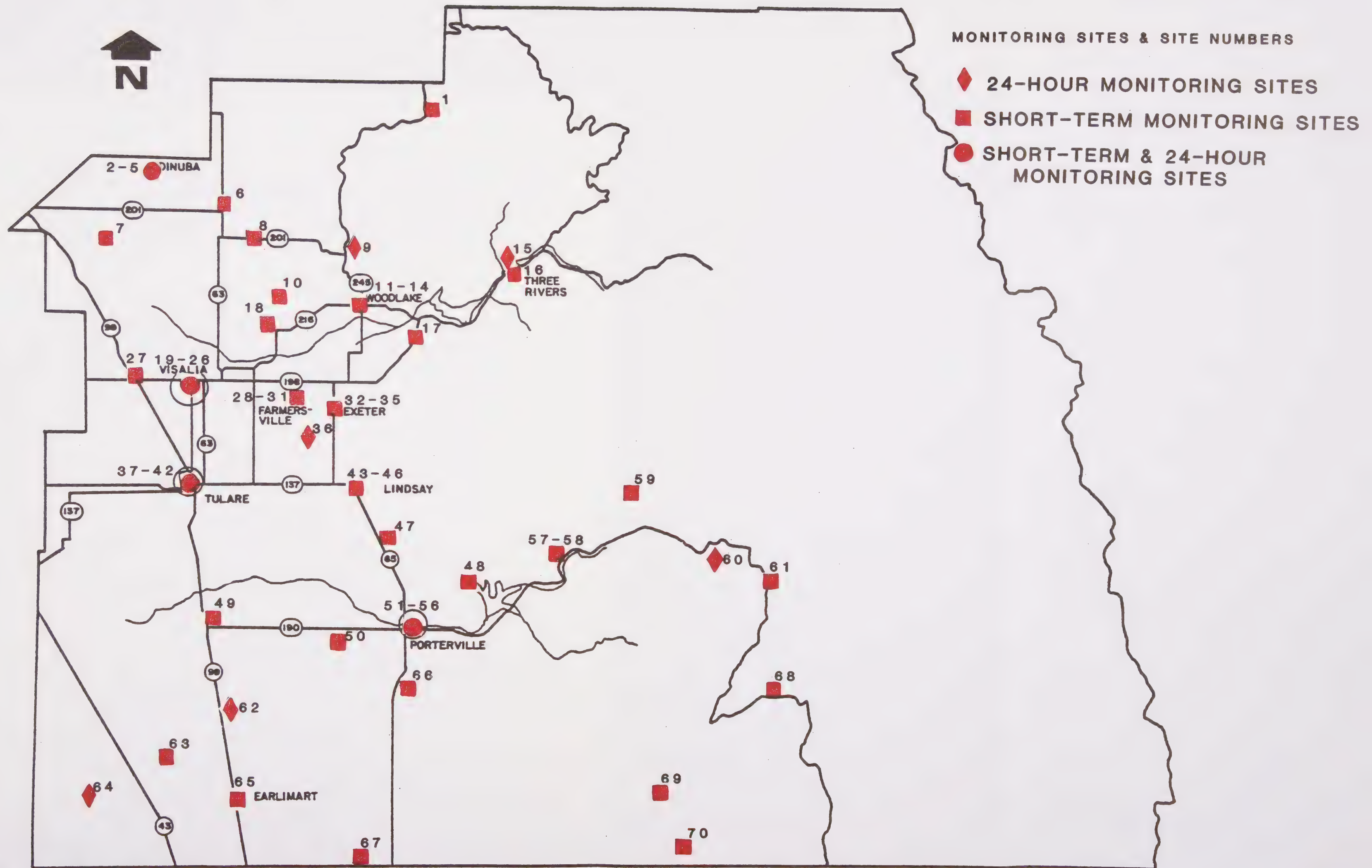






TABLE I

## SUMMARY OF COMMUNITY NOISE SURVEY DATA

| Site # | Location/Community                  | Level, dBA     |                |                           |                           | Estimated<br>L <sub>dn</sub> * |
|--------|-------------------------------------|----------------|----------------|---------------------------|---------------------------|--------------------------------|
|        |                                     | L <sub>D</sub> | L <sub>N</sub> | L <sub>max</sub> (Source) | L <sub>min</sub> (Source) |                                |
| 1      | Sierra School - Badger              | 42             | 23             | 72 (truck)                | 20 (wind)                 | 40 dB                          |
| 2      | Brent & Lindara - Dinuba            | 51             | 44             | 64 (children)             | 36 (traffic)              | 50 dB                          |
| 3**    | 673 Newton - Dinuba                 | 48             | 42             | 72 (aircraft)             | 29 (traffic)              | 50 dB                          |
| 4      | Ventura St. & College Ave - Dinuba  | 49             | 39             | 61 (traffic)              | 37 (fans)                 | 49 dB                          |
| 5      | Vassar Ave. & Greene Ave - Dinuba   | 49             | 45             | 65 (traffic)              | 37 (industry)             | 52 dB                          |
| 6      | Lee Rd. & Ave. 467 - Cutler         | 49             | 41             | 63 (auto)                 | 35 (pump)                 | 50 dB                          |
| 7      | Kate Rd. & Ave 378 - Linden         | 53             | 39             | 69 (traffic)              | 35 (pump)                 | 52 dB                          |
| 8      | St. Mary's Church, Ave 384 - Yettem | 53             | 36             | 60 (traffic)              | 32 (pump)                 | 51 dB                          |
| 9**    | 37650 Millwood - Elderwood          | 49             | 44             | 79 (dog)                  | 25 (traffic)              | 52 dB                          |
| 10     | Rd. 156 on Ave. 340 - Rural Ivanhoe | 46             | 30             | 56 (traffic)              | 27 (pump)                 | 45 dB                          |
| 11     | Redwood & Crestwood - Woodlake      | 46             | 33             | 63 (traffic)              | 31 (traffic)              | 45 dB                          |
| 12     | Cypress & Sequoia - Woodlake        | 53             | 38             | 69 (school bus)           | 35 (traffic)              | 52 dB                          |
| 13     | Miller Brown Comm. Park - Woodlake  | 50             | 37             | 64 (truck)                | 32 (traffic)              | 49 dB                          |
| 14     | Palm St. @ Ropes Ave. - Woodlake    | 52             | 38             | 64 (traffic)              | 35 (traffic)              | 51 dB                          |
| 15     | Eggers Dr., Library - Three Rivers  | 37             | 32             | 46 (bird)                 | 31 (water)                | 40 dB                          |
| 16**   | 42695 Sierra Dr. - Three Rivers     | 59             | 59             | 59 (river)                | 59 (river)                | 65 dB                          |
| 17     | Summit Ave & Rd. 244 - Lemon Cove   | 46             | 34             | 55 (traffic)              | 30 (insects)              | 45 dB                          |
| 18     | Hawthorne Rd. & Ave. 330 - Ivanhoe  | 52             | 40             | 71 (truck)                | 37 (fan)                  | 51 dB                          |
| 19     | N. Visalia Community Center         | 54             | 45             | 65 (traffic)              | 41 (traffic)              | 54 dB                          |
| 20     | Golden West High School - Visalia   | 51             | 36             | 60 (aircraft)             | 35 (traffic)              | 50 dB                          |
| 21     | Turner & Center - Visalia           | 55             | 41             | 61 (truck)                | 39 (auto)                 | 55 dB                          |
| 22**   | 607 Woodland - Visalia              | 47             | 40             | 64 (traffic)              | 28 (traffic)              | 48 dB                          |
| 23     | Jefferson Park - Visalia            | 52             | 40             | 62 (traffic)              | 38 (traffic)              | 51 dB                          |
| 24     | Willow Glen School - Visalia        | 57             | 41             | 69 (truck)                | 37 (traffic)              | 56 dB                          |
| 25     | 326 E. Monte Vista - Visalia        | 46             | 34             | 53 (traffic)              | 33 (industry)             | 45 dB                          |
| 26     | Victor St. & Jackie St. - Visalia   | 49             | 40             | 67 (traffic)              | 37 (traffic)              | 49 dB                          |

TABLE I (Continued)

## SUMMARY OF COMMUNITY NOISE SURVEY DATA

| Site # | Location/Community                    | Level, dBA |       |                    |                    | Estimated<br>$L_{dn}^*$ |
|--------|---------------------------------------|------------|-------|--------------------|--------------------|-------------------------|
|        |                                       | $L_D$      | $L_N$ | $L_{max}$ (Source) | $L_{min}$ (Source) |                         |
| 52     | W. end, Sandra Lane - Porterville     | 49         | 48    | 55 (dogs)          | 39 (traffic)       | 48 dB                   |
| 53     | W. end, Olivewood - Porterville       | 54         | 43    | 65 (truck)         | 39 (traffic)       | 54 dB                   |
| 54     | Alley, Lindale & Lotas - Porterville  | 50         | 46    | 65 (auto)          | 43 (traffic)       | 53 dB                   |
| 55     | Olive Street School - Porterville     | 53         | 50    | 60 (voices)        | 45 (dogs)          | 57 dB                   |
| 56**   | 173 Williams - Porterville            | 55         | 46    | 80 (dogs)          | 29 (traffic)       | 55 dB                   |
| 57     | West of Fire Station - Springville    | 53         | 38    | 62 (traffic)       | 37 (water)         | 51 dB                   |
| 58     | La Colina @ Pleasant Oak -Springville | 51         | 33    | 68 (motorcycle)    | 31 (water)         | 49 dB                   |
| 59     | Balch Park (lower lake) -Tulare Co.   | 31         | 22    | 53 (traffic)       | 22 (unknown)       | 31 dB                   |
| 60**   | Camp Nelson Realty, Camp Nelson       | 40         | 32    | 67 (traffic)       | 25 (water)         | 41 dB                   |
| 61     | Tamarack Dr. & Aspen Dr. - Ponderosa  | 42         | 20    | 55 (traffic)       | 19 (unknown)       | 40 dB                   |
| 62**   | Pixley Fire Station - Pixley          | 55         | 57    | 84 (truck)         | 37 (Fwy 99)        | 64 dB                   |
| 63     | Rd. 104 @ Ave. 72 - Earlimart/Pixley  | 47         | 30    | 55 (cotton picker) | 25 (unknown)       | 46 dB                   |
| 64**   | Alpaugh Irrigation District - Alpaugh | 53         | 43    | 80 (traffic)       | 25 (traffic)       | 53 dB                   |
| 65     | Earlimart Comm. Park - Earlimart      | 53         | 54    | 62 (auto)          | 51 (traffic)       | 60 dB                   |
| 66     | First Presbyterian Ch. - Terra Bella  | 52         | 46    | 59 (traffic)       | 43 (traffic)       | 54 dB                   |
| 67     | Olive Norwood School - Richgrove      | 49         | 47    | 58 (voices)        | 43 (traffic)       | 54 dB                   |
| 68     | Near town entrance - Johnsondale      | 36         | 32    | 50 (traffic)       | 29 (water)         | 39 dB                   |
| 69     | R.V. Park - Calif. Hot Springs        | 48         | 43    | 68 (logging truck) | 40 (running water) | 51 dB                   |
| 70     | Fire Station - Panorama Heights       | 28         | 21    | 40 (barking dogs)  | 18 (insects)       | 29 dB                   |

$L_D$  = Average  $L_{eq}$  of two 15-minute samples obtained between 7:00 a.m. and 10:00 p.m. except for sites marked with a \*\* where 24-hour monitoring was conducted.

$L_N$  =  $L_{eq}$  for one 15-minute sample obtained between 10:00 p.m. and 7:00 a.m. except for sites marked with a \*\* where 24-hour monitoring was conducted.

\*  $L_{dn}$  estimated from  $L_D$  and  $L_N$

Source: Brown-Buntin Associates, Inc.



TABLE I (Continued)

## SUMMARY OF COMMUNITY NOISE SURVEY DATA

| Site # | Location/Community                   | Level, dBA     |                |                           |                           | Estimated<br>L <sub>dn</sub> * |
|--------|--------------------------------------|----------------|----------------|---------------------------|---------------------------|--------------------------------|
|        |                                      | L <sub>D</sub> | L <sub>N</sub> | L <sub>max</sub> (Source) | L <sub>min</sub> (Source) |                                |
| 27     | Rd. 68 & Fig Ave. - Goshen           | 61             | 57             | 73 (traffic)              | 55 (Fwy 99)               | 64 dB                          |
| 28     | Hester Near Rose Ave. - Farmersville | 52             | 41             | 69 (traffic)              | 40 (traffic)              | 52 dB                          |
| 29     | N. End, Brundage Ave. - Farmersville | 62             | 41             | 62 (skill saw)            | 35 (dogs)                 | 60 dB                          |
| 30     | Jennings Park - Farmersville         | 49             | 40             | 64 (bus)                  | 37 (traffic)              | 49 dB                          |
| 31     | Ventura & Fresno St. - Farmersville  | 55             | 40             | 65 (truck)                | 37 (traffic)              | 54 dB                          |
| 32     | W. End, Betsy Place - Exeter         | 47             | 38             | 60 (dog)                  | 31 (traffic)              | 47 dB                          |
| 33     | Exeter High School - Exeter          | 58             | 47             | 73 (truck)                | 43 (traffic)              | 58 dB                          |
| 34     | Exeter Park - Exeter                 | 55             | 42             | 71 (truck)                | 37 (traffic)              | 54 dB                          |
| 35     | Quince Ave & Davis St. - Exeter      | 50             | 37             | 64 (traffic)              | 32 (traffic)              | 49 dB                          |
| 36**   | 18425 Ave. 264 - Exeter              | 55             | 41             | 73 (traffic)              | 25 (traffic)              | 54 dB                          |
| 37     | W. End, Washington Ave. - Tulare     | 47             | 59             | 62 (traffic)              | 56 (Fwy 99)               | 65 dB                          |
| 38     | Live Oak Park - Tulare               | 47             | 54             | 58 (traffic)              | 51 (Fwy)                  | 60 dB                          |
| 39**   | 798 Mahaleb - Tulare                 | 49             | 46             | 86 (dog)                  | 26 (traffic)              | 53 dB                          |
| 40     | 1040 Sycamore - Tulare               | 51             | 50             | 70 (dogs)                 | 40 (birds)                | 57 dB                          |
| 41     | Mulcahy School - Tulare              | 54             | 52             | 65 (leaf blower)          | 49 (traffic)              | 59 dB                          |
| 42     | Hemlock St. & Aspen Ave. - Tulare    | 55             | 58             | 63 (truck)                | 52 (Fwy 99)               | 64 dB                          |
| 43     | Orange Ave. & Alameda St. - Lindsay  | 49             | 42             | 59 (traffic)              | 42 (unknown)              | 50 dB                          |
| 44     | Lindsay Hospital - Lindsay           | 46             | 35             | 59 (traffic)              | 33 (fan)                  | 46 dB                          |
| 45     | Stanford Ave. & Samoa St. - Lindsay  | 45             | 30             | 60 (traffic)              | 30 (traffic)              | 44 dB                          |
| 46     | 474 Central Ave. - Lindsay           | 52             | 46             | 60 (traffic)              | 44 (olive plant)          | 54 dB                          |
| 47     | Strathmore High School - Strathmore  | 56             | 44             | 69 (traffic)              | 39 (equipment)            | 55 dB                          |
| 48     | Rd. 292 S. of Ave. 176 - Strathmore  | 34             | 26             | 48 (birds)                | 24 (substation)           | 35 dB                          |
| 49     | Adams Rd. & Klindera Ave. - Tipton   | 54             | 56             | 62 (dog)                  | 47 (traffic)              | 62 dB                          |
| 50     | S. end of Rd. 190 - Poplar           | 48             | 48             | 65 (rooster)              | 38 (rooster)              | 54 dB                          |
| 51     | LDS Church - Porterville             | 51             | 47             | 60 (truck)                | 44 (traffic)              | 54 dB                          |





## CHAPTER THREE

### GOALS AND POLICIES

#### 3.1 Goals

The goals of the Noise Element of the General Plan are as follows:

1. Protect the citizens of Tulare County from the harmful effects of exposure to excessive noise.
2. Protect the economic base of Tulare County by preventing the encroachment of incompatible land uses near known noise-producing industries, railroads, airports and other sources.

The goals of the Noise Element may be realized by pursuing the policies and implementation measures outlined in this chapter.

#### 3.1 Land Use Compatibility Guidelines

Figure 3 is provided as a reference concerning the sensitivity of different land uses to their noise environment. It is intended to illustrate the range of noise levels which will allow the full range of activities normally associated with a given land use. For example, exterior noise levels in the range of 50-65 dB  $L_{dn}$  (or CNEL) or below are generally considered acceptable for residential land uses, since these levels will usually allow normal outdoor and indoor activities such as sleep and communication to occur without interruption. Industrial facilities, however, can be relatively insensitive to noise and may generally be located in a noise environment of up to 75 dB  $L_{dn}$  (or CNEL) without significant adverse effects. Specific noise compatibility criteria in terms of  $L_{dn}$  or CNEL for residential and other noise sensitive land uses in Tulare County are defined in Section 3.3 of this chapter. Specific noise level criteria are based upon the recommendations of the State of California, U.S. Department of Housing and Urban Development, U.S. Environmental Protection Agency and the results of field studies conducted during the preparation of this Element.

### 3.3 Policies

The following policy statements reflect the commitment of Tulare County to the goals outlined above:

**Policy 3.3.1** Areas within Tulare County shall be designated as **noise-impacted** if exposed to existing or projected future noise levels at the exterior of buildings which exceed 60 dB L<sub>dn</sub> (or CNEL). Maps which indicate areas exposed to existing or projected future noise levels exceeding 60 dB L<sub>dn</sub> (or CNEL) for the major noise sources identified in Figure 1 are included in Appendix B of this document.

**Policy 3.3.2** New development of residential or other noise-sensitive land uses which require discretionary approval under the Tulare County Zoning Ordinance or the Tulare County Subdivision Ordinance (e.g. use permits, zone changes, subdivision maps, parcel maps) will not be permitted in noise-impacted areas unless effective mitigation measures are incorporated into the specific design of such projects to reduce noise levels to 60 dB L<sub>dn</sub> (or CNEL) or less within outdoor activity areas and 45 dB L<sub>dn</sub> (or CNEL) or less within interior living spaces. No noise-sensitive land uses which require approval under the Tulare County Zoning Ordinance or the Tulare County Subdivision Ordinance shall be permitted within the 60 CNEL contour of the public use airports identified in this Plan. Where it is not possible to reduce exterior noise levels within outdoor activity areas to 60 dB L<sub>dn</sub> (or CNEL) or less after the practical application of the best available noise reduction technology, an exterior noise level of up to 65 dB L<sub>dn</sub> (or CNEL) will be allowed. Under no circumstances will an interior noise level exceeding 45 dB L<sub>dn</sub> be allowed with the windows and doors closed. It should be noted that in instances where the windows and doors must remain closed to achieve the required acoustical isolation, mechanical ventilation or air conditioning must be provided.



**Figure 3**

# **Land Use Compatibility For Community Noise Environments**

| LAND USE CATEGORY   | COMMUNITY NOISE EXPOSURE<br>L <sub>dn</sub> OR CNEL, dB |    |    |    |    |    |
|---|---|----|----|----|----|----|
|   | 55  | 60 | 65 | 70 | 75 | 80 |
| RESIDENTIAL – LOW DENSITY<br>SINGLE FAMILY, DUPLEX,<br>MOBILE HOMES |   |    |    |    |    |    |
| RESIDENTIAL – MULTI. FAMILY   |   |    |    |    |    |    |
| TRANSIENT LODGING –<br>MOTELS, HOTELS                               |   |    |    |    |    |    |
| SCHOOLS, LIBRARIES,<br>CHURCHES, HOSPITALS,<br>NURSING HOMES        |   |    |    |    |    |    |
| AUDITORIUMS, CONCERT<br>HALLS, AMPHITHEATRES                        |   |    |    |    |    |    |
| SPORTS ARENA, OUTDOOR<br>SPECTATOR SPORTS                           |   |    |    |    |    |    |
| PLAYGROUNDS,<br>NEIGHBORHOOD PARKS                                  |   |    |    |    |    |    |
| GOLF COURSES, RIDING<br>STABLES, WATER RECREATION,<br>CEMETERIES    |   |    |    |    |    |    |
| OFFICE BUILDINGS, BUSINESS<br>COMMERCIAL AND<br>PROFESSIONAL        |   |    |    |    |    |    |
| INDUSTRIAL, MANUFACTURING<br>UTILITIES, AGRICULTURE                 |   |    |    |    |    |    |

## **INTERPRETATION**



### **NORMALLY ACCEPTABLE**

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.



### **CONDITIONALLY ACCEPTABLE**

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.



### **NORMALLY UNACCEPTABLE**

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.



### **CLEARLY UNACCEPTABLE**

New construction or development should generally not be undertaken.

## **CONSIDERATIONS IN DETERMINATION OF NOISE-COMPATIBLE LAND USE**

### **A. NORMALIZED NOISE EXPOSURE INFORMATION DESIRED**

Where sufficient data exists, evaluate land use suitability with respect to a "normalized" value of CNEL or L<sub>dn</sub>. Normalized values are obtained by adding or subtracting the constants described in Table 1 to the measured or calculated value of CNEL or L<sub>dn</sub>.

### **B. NOISE SOURCE CHARACTERISTICS**

The land use-noise compatibility recommendations should be viewed in relation to the specific source of the noise. For example, aircraft and railroad noise is normally made up of higher single noise events than auto traffic but occurs less frequently. Therefore, different sources yielding the same composite noise exposure do not necessarily create the same noise environment. The State Aeronautics Act uses 65 dB CNEL as the criterion which airports must eventually meet to protect existing residential communities from unacceptable exposure to aircraft noise. In order to facilitate the purposes of the Act, one of which is to encourage land uses compatible with the 65 dB CNEL criterion wherever possible, and in order to facilitate the ability of airports to comply with the Act, residential uses located in Com-

munity Noise Exposure Areas greater than 65 dB should be discouraged and considered located within normally unacceptable areas.

### **C. SUITABLE INTERIOR ENVIRONMENTS**

One objective of locating residential units relative to a known noise source is to maintain a suitable interior noise environment at no greater than 45 dB CNEL of L<sub>dn</sub>. This requirement, coupled with the measured or calculated noise reduction performance of the type of structure under consideration, should govern the minimum acceptable distance to a noise source.

### **D. ACCEPTABLE OUTDOOR ENVIRONMENTS**

Another consideration, which in some communities is an overriding factor, is the desire for an acceptable outdoor noise environment. When this is the case, more restrictive standards for land use compatibility, typically below the maximum considered "normally acceptable" for that land use category, may be appropriate.

- Policy 3.3.3** New development of industrial, commercial or other noise-generating land uses will not be permitted if resulting noise levels will exceed 60 dB  $L_{dn}$  (or CNEL) at the boundary of areas planned and zoned for residential or other noise-sensitive land uses, unless determined to be necessary to promote the public health, safety and welfare of the County.
- Policy 3.3.4** For areas designated by Tulare County as being within Foothill and Mountain Planning Areas and outside Foothill Development Corridors, the hourly  $L_{eq}$  resulting from the development of new noise-sensitive land uses or new noise-generating sources shall not exceed 50 dBA during the day (7:00 a.m. - 10:00 p.m.) or 40 dBA during the night (10:00 p.m. - 7:00 a.m.) when measured at the boundary of areas containing or planned and zoned for residential or other noise-sensitive land uses. For these same areas and under the same circumstances, the maximum A-weighted noise level ( $L_{max}$ ) shall not exceed 70 dBA during the day or 60 dBA during the night.
- Policy 3.3.5** Noise level criteria applied to land uses other than residential or other noise-sensitive uses shall be consistent with the recommendations of the California Office of Noise Control (Figure 3).
- Policy 3.3.6** Tulare County shall enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code (UBC). Title 24 requires that interior noise levels not exceed 45 dB  $L_{dn}$  (or CNEL) with the windows and doors closed within new developments of multi-family dwellings, condominiums, hotels or motels. UBC Chapter 35 requires that common wall and floor/ceiling assemblies within multi-family dwellings comply with minimum standards concerning the transmission of airborne sound and structure-borne impact noise. Title 24 requires that conformance with the above-described standards be documented by the submission of an acoustical analysis whenever new multi-family dwellings, condominiums, hotels or motels are proposed for areas within



the 60 dB L<sub>dn</sub> (or CNEL) contour of a major noise source as determined by the local jurisdiction.

**Policy 3.3.7** When purchasing new equipment and vehicles, Tulare County shall strive to purchase equipment which complies with noise level performance standards set forth in this Noise Element.

**Policy 3.3.8** In conformance with the directives of State planning law, the County shall ensure that the Noise Element is consistent with and does not conflict with other elements of the County's General Plan.





## CHAPTER FOUR

### IMPLEMENTATION PROGRAM

In order to achieve compliance with the policies of the Noise Element, Tulare County shall undertake the following implementation program. The implementation program focuses on the prevention of new noise-related land use conflicts by requiring that all relevant development plans, programs and proposals be reviewed to determine whether such plans, programs and proposals adequately address noise and its potential effects.

Resource information available to Tulare County for use in the review process includes the noise exposure maps contained within Appendix B of this document and the information concerning the effects of noise on people and techniques available for noise control contained within the Technical Reference Document. The noise exposure maps are intended for use as a screening device in determining when a proposed development of residential or other noise-sensitive land uses may be exposed to excessive noise levels and to provide guidance in the long range planning processes. Generally, the noise exposure maps included in Appendix B provide a conservative (worst-case) assessment of noise exposure for the major noise sources identified for study during the preparation of the Noise Element. It is likely that other major sources of noise will be identified during the project review process. This will be especially true of industrial or commercial sources, since only a representative sample of such sources were evaluated during the preparation of this document.

The information contained within the Technical Reference Document should be used as a guideline for determining whether or not proposed noise mitigation measures are a reasonable application of the techniques available, and likely to achieve the desired results. Control of noise at the source and through the thoughtful location and orientation of receiving uses should be given preference over the control of noise at the path of transmission through the use of noise barriers.

4.1 Tulare County shall review all relevant development plans, programs and proposals, including those initiated by both the public and private sectors, to ascertain and ensure their conformance with the policy framework outlined in this Noise Element.

4.2 Prior to the approval of a discretionary permit (i.e. zone change, use permit or division of land) for a proposed development of residential or other noise-sensitive land uses in a noise-impacted area, or the development of an industrial, commercial or other noise-generating land use in or near an area planned and zoned for residential or other noise-sensitive land uses, an acoustical analysis shall be required. In addition, the County shall investigate the feasibility of establishing performance standards for new noise-generating land uses in the Tulare County Zoning Ordinance, for application at the building permit stage, within areas planned and zoned for residential or other noise-sensitive land uses.

At the discretion of the reviewing agency, the requirement for an acoustical analysis may be waived provided that all of the following conditions exist:

- a. The proposed development is not subject to the provisions of California Administrative Code Title 24.
- b. The existing or projected future noise exposure at the exterior of buildings which will contain noise-sensitive uses or within proposed outdoor activity areas (patios, decks, backyards, pool areas, recreation areas, etc.) does not exceed 65 dB L<sub>dn</sub> (or CNEL).
- c. The topography in the project area is flat, and the noise source and receiving land use are at the same grade.



- d. Effective noise mitigation, as determined by the reviewing agency, is incorporated into the project design to reduce noise exposure to the levels specified by the policies of the Noise Element. Such measures may include the use of building setbacks, building orientation and noise barriers. If a noise barrier is required for mitigation of exterior noise levels, it should be constructed of tight-fitting, massive materials (1" thick wood, stucco, masonry, etc.) and should be of sufficient height to interrupt line-of-sight between the source and receiver. Line-of-sight should be determined by drawing a straight line between the effective heights of the noise source and receiver. For traffic noise, and in instances where the number of heavy trucks exceeds five (5) percent of the Average Daily Traffic (ADT), an effective source height of at least eight (8) feet above the crown of the roadway should be used. For all other roadways, an effective height of two (2) feet above the roadway should be used. For railroad noise, an effective height of ten (10) feet above the rails should be used for locomotive and car noise, and an effective height of fifteen (15) feet above the rails should be used for horn noise. For industrial, commercial or other stationary noise sources, or for aircraft noise, a detailed evaluation of noise source spectra and effective height(s) should be conducted. Receiver height should be assumed to be five (5) feet above project grade for outdoor activity areas such as backyards. The receiver height for small patios or upper floor decks should be assumed to be four (4) feet above the finished floor elevation. Interior noise levels may be assumed to be in compliance with the 45 dB L<sub>dn</sub> (or CNEL) standard as long as the building construction complies with today's more stringent thermal insulation requirements, and exterior noise levels do not

exceed the standards of the Noise Element, and windows and doors may remain closed. This will require the installation of air conditioning or mechanical ventilation.

When the above-described conditions do not exist and an acoustical analysis is required, it should:

- a. Be the responsibility of the applicant.
- b. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.
- c. Include estimated noise levels in terms of  $L_{dn}$  (or CNEL) for existing and projected future (10-20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element.
- d. Include recommendations for appropriate mitigation measures to achieve compliance with the adopted policies and standards of the Noise Element.
- e. Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.

Industrial uses are defined as the types of light manufacturing establishments and manufacturing and industrial uses requiring a special use permit set forth in the "M-1" Light Manufacturing Zone, and the types of heavy manufacturing and industrial uses and uses requiring a special use permit set forth in the "M-2" Heavy Manufacturing Zone. Commercial uses are defined as the types of businesses or services (but not including retail stores) and uses requiring a special use permit set forth in the "C-2"



General Commercial Zone, and the types of service commercial establishments and uses requiring a special use permit set forth in the "C-3" Service Commercial Zone, all as contained in the Tulare County Zoning Ordinance.

- 4.3 Tulare County shall develop and implement procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are implemented as part of the project permitting process. The appropriate time for requiring an acoustical analysis would be as early in the project review or permitting process as possible, so that noise mitigation may be an integral part of the project design rather than an afterthought.
- 4.4 Tulare County shall encourage the California Highway Patrol, the Sheriff's office and local police departments to actively enforce existing sections of the California Vehicle Code relating to adequate vehicle mufflers and modified exhaust systems.
- 4.5 The standards set forth in the Noise Element shall be incorporated into the zoning ordinance of Tulare County as appropriate.
- 4.6 The Land Use and Circulation Elements of the Tulare County General Plan shall be reviewed and amended if necessary, to ensure consistency with the findings and policies of the Noise Element as they relate to the prevention of future noise conflicts.
- 4.7 The Noise Element of the Tulare County General Plan shall periodically be reviewed and updated to ensure that noise exposure information, goals and policies are consistent with changing conditions and/or standards.



## APPENDIX A

### Acoustical Terminology

Because a substantial amount of noise-specific nomenclature and terminology has been used throughout the text of this document, the following definitions of key acoustical terms have been provided to facilitate the review, understanding and implementation of the Noise Element:

- o **"Ambient noise level"** means the composite of noise from all sources near and far. In this context it represents the normal or existing level of environmental noise at a given location for a specific time of the day or night.
- o **"A weighted sound level"** means the sound level in decibels as measured with a sound level meter using the "A" weighted network (scale) at slow meter response. The unit of measurement is referred to herein as dBA. The "A" weighted network responds to the frequency content of noise in a manner similar to the human ear.
- o **"CNEL"** means Community Noise Equivalent Level. The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m. Nighttime and evening penalties are intended to compensate for the increased potential for annoyance during these more sensitive times of the day or night.
- o **"Decibel, dB"** means a unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
- o **"Equivalent Energy Level,  $L_{eq}$ "** means the sound level corresponding to a steady state sound level containing the same total energy as a time varying signal over a given sample period.  $L_{eq}$  is typically computed over 1, 8 and 24-hour sample periods.
- o **" $L_{dn}$ "** means Day/Night Average Level. The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m. to account for increased human sensitivity during these hours.

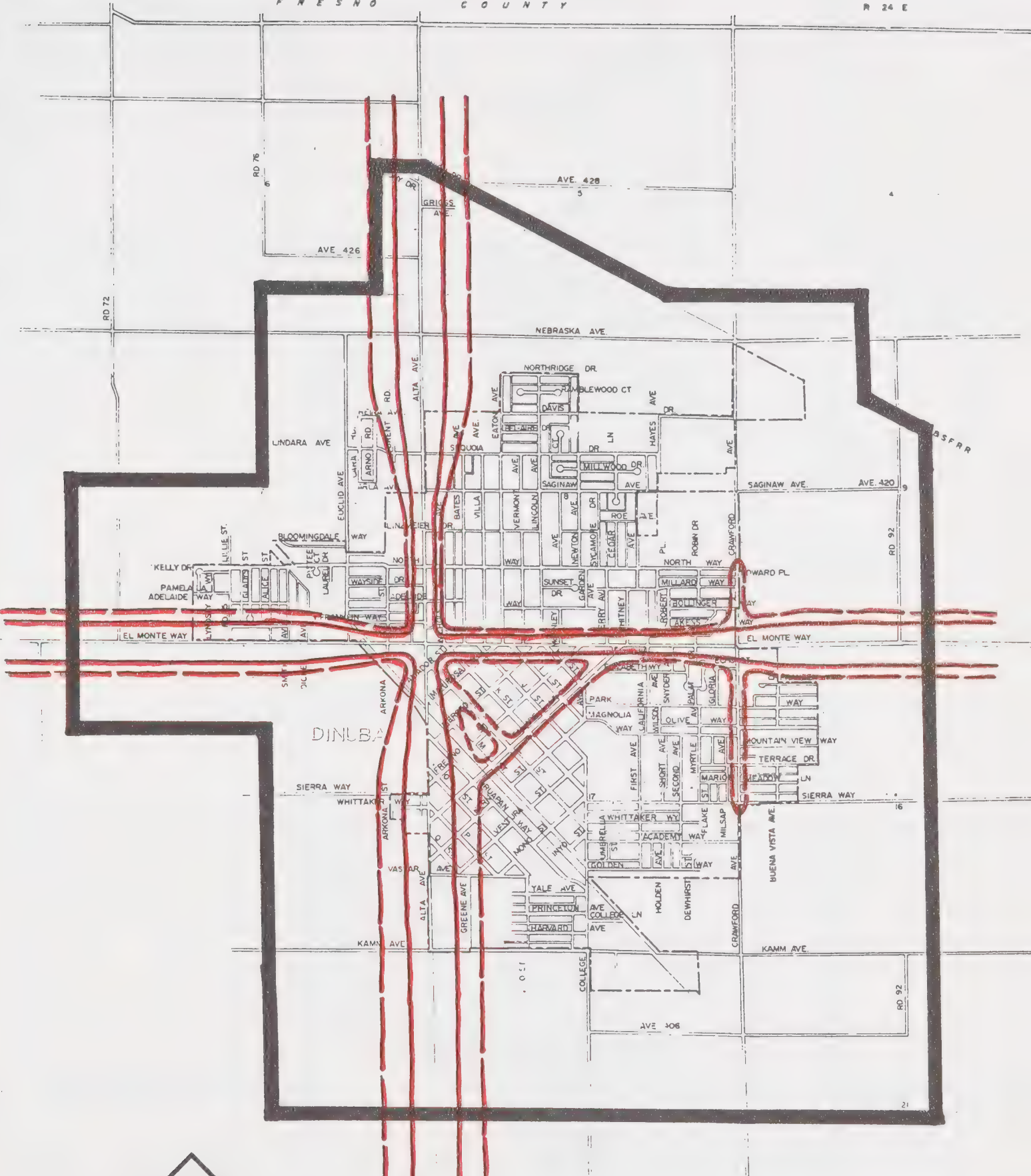


- o **"L<sub>max</sub>"** means the maximum A-weighted noise level recorded during a noise event.
- o **"Noise Exposure Contours"** Lines drawn about a noise source indicating constant energy levels of noise exposure. CNEL and L<sub>dn</sub> are the descriptors utilized herein to describe community exposure to noise.
- o **"Noise-Impacted Area"** means an area which is exposed to existing or projected future noise levels in excess of 60 dB L<sub>dn</sub> (or CNEL).
- o **"Noise-Sensitive Land Uses"** includes all residential land uses, churches, hospitals, schools and public libraries.
- o **"Preempted Noise Source"** means a noise source which cannot be regulated by the local jurisdiction due to existing State or federal regulations already applying to the source. Examples of such sources are vehicles operated on public roadways, railroad operations and aircraft operations.

**APPENDIX B**  
**NOISE EXPOSURE MAPS**







  
**NORTH**  
 NOT TO SCALE

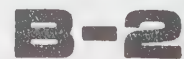
— 60 dB Ldn (1986)  
 — 60 dB Ldn (2010)

**BBA/QUAD**

**DINUBA**

**B-1**

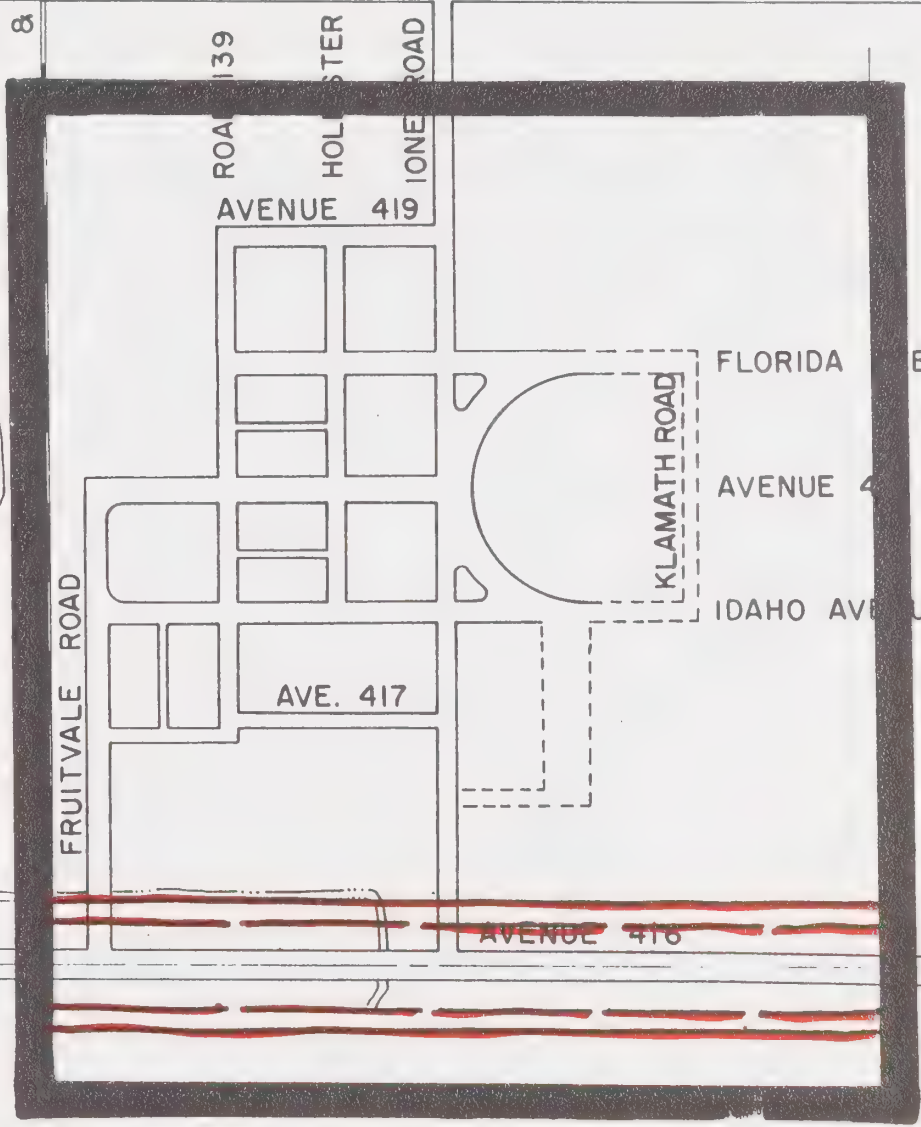








S. F. R. R.  
 ROAD 139  
 ROAD 142  
 ROAD 420  
 ROAD 419  
 ROAD 417  
 ROAD 416



**NORTH**

NOT TO SCALE

60 dB Ldn (1986)  
 60 dB Ldn (2010)

**BBA/QUAD**

**EAST OROSI**

**B-3**





368

TRAVER CANAL

AVENUE 368

CANAL DRIVE

MERRITT DRIVE

JACOBS DRIVE

BULLARD DRIVE

BAKER DRIVE

KITCHEN DRIVE

DRIVE

ZANT DRIVE

BURKE DRIVE

AVENUE 360

ROAD 44

RD.



**NORTH**

NOT TO SCALE

60 dB Ldn (1986)

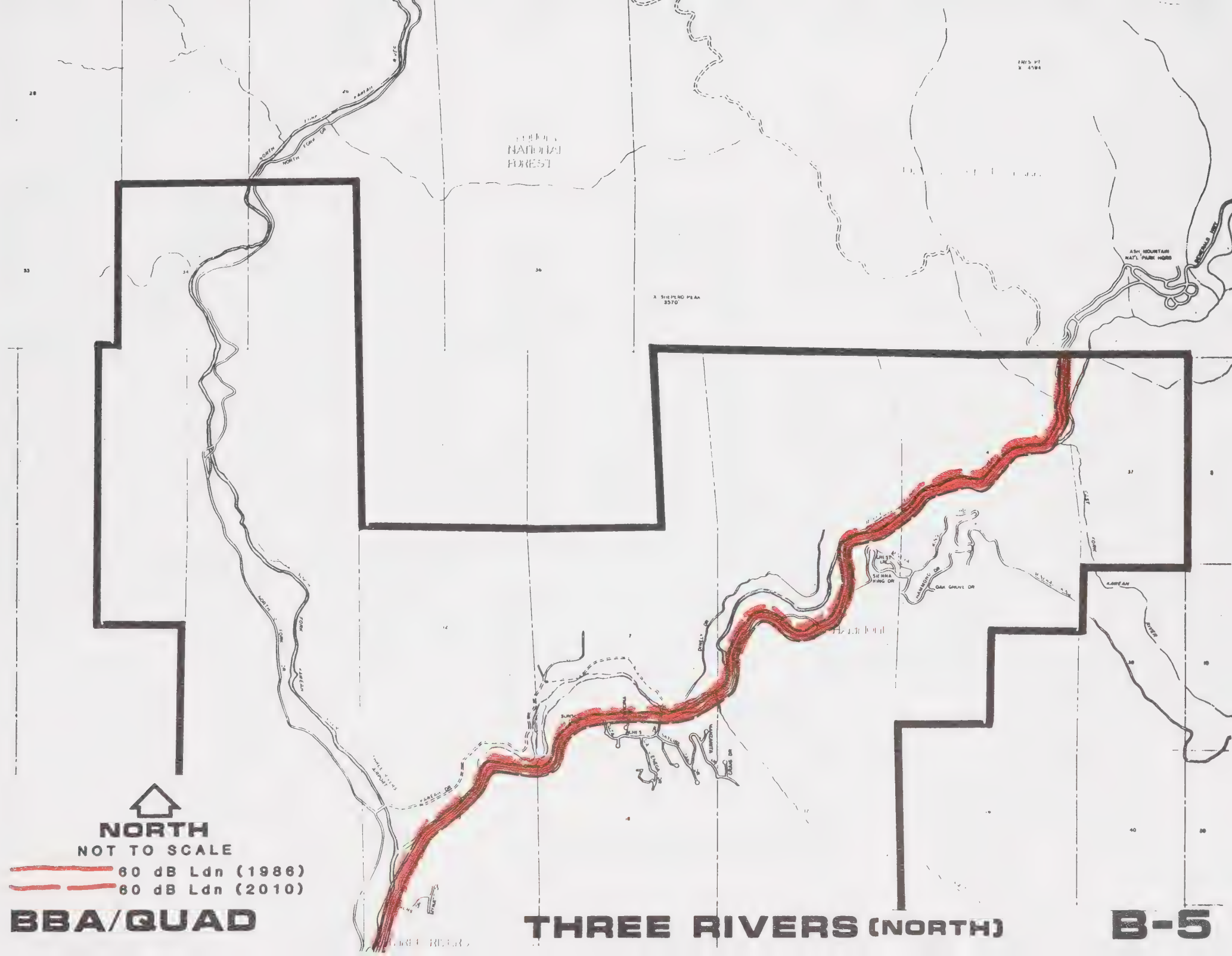
60 dB Ldn (2010)

**BBA/QUAD**

**TRAVER**

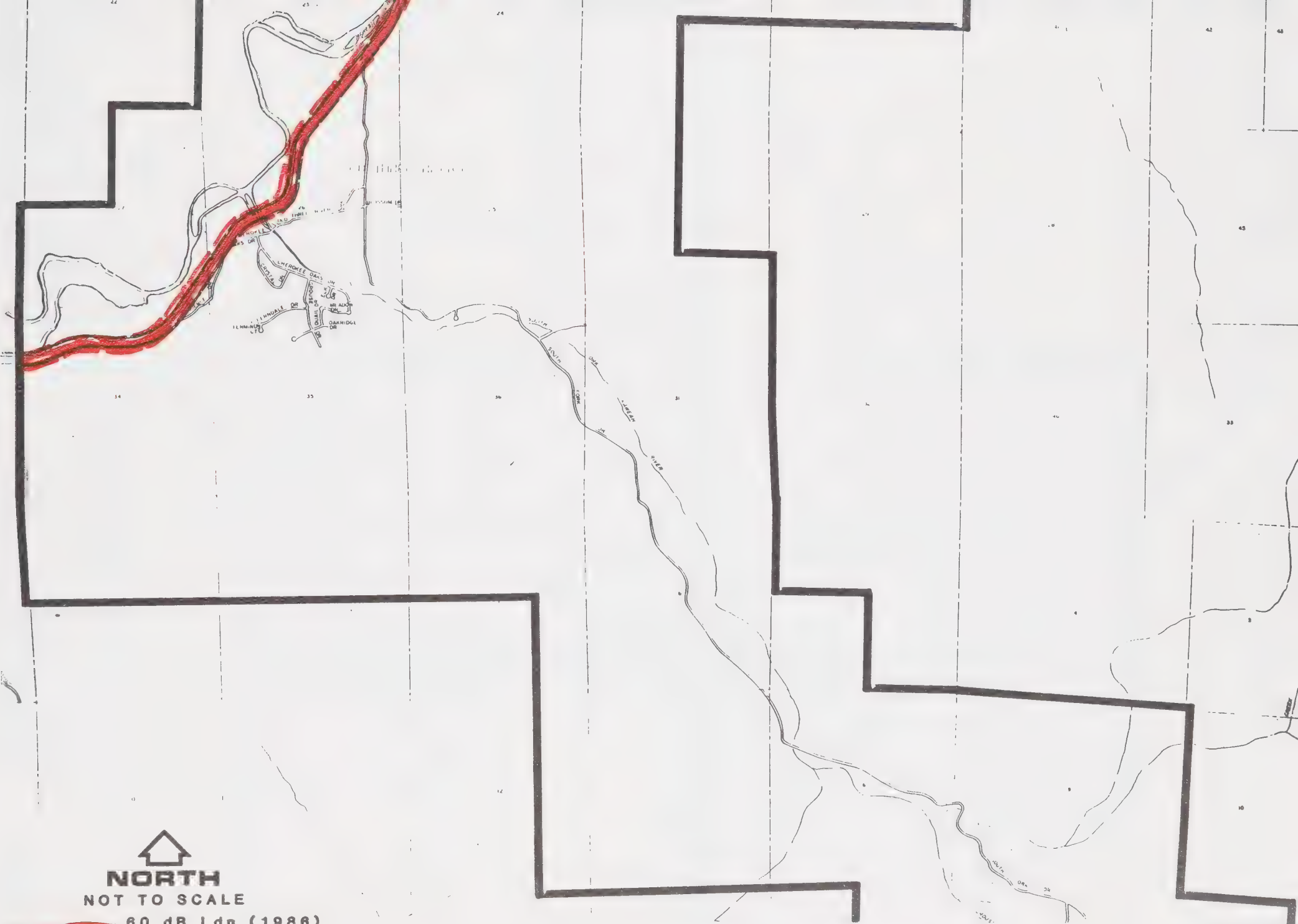
**B-4**











**NORTH**

NOT TO SCALE

60 dB Ldn (1986)

60 dB Ldn (2010)

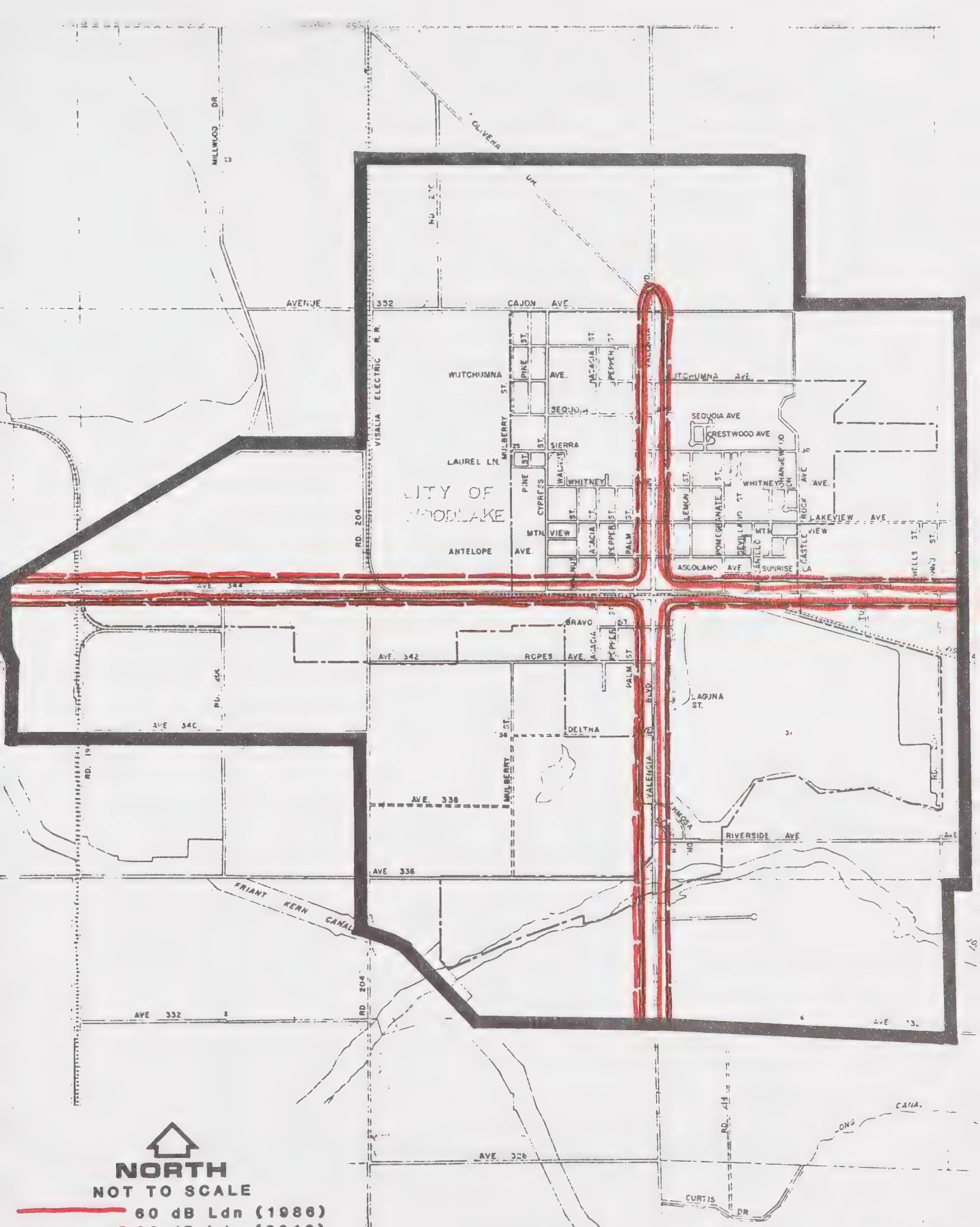
**BBA/QUAD**

**THREE RIVERS (SOUTH)**

**B-5**







**NORTH**

**NOT TO SCALE**

60 dB Ldn (1986)

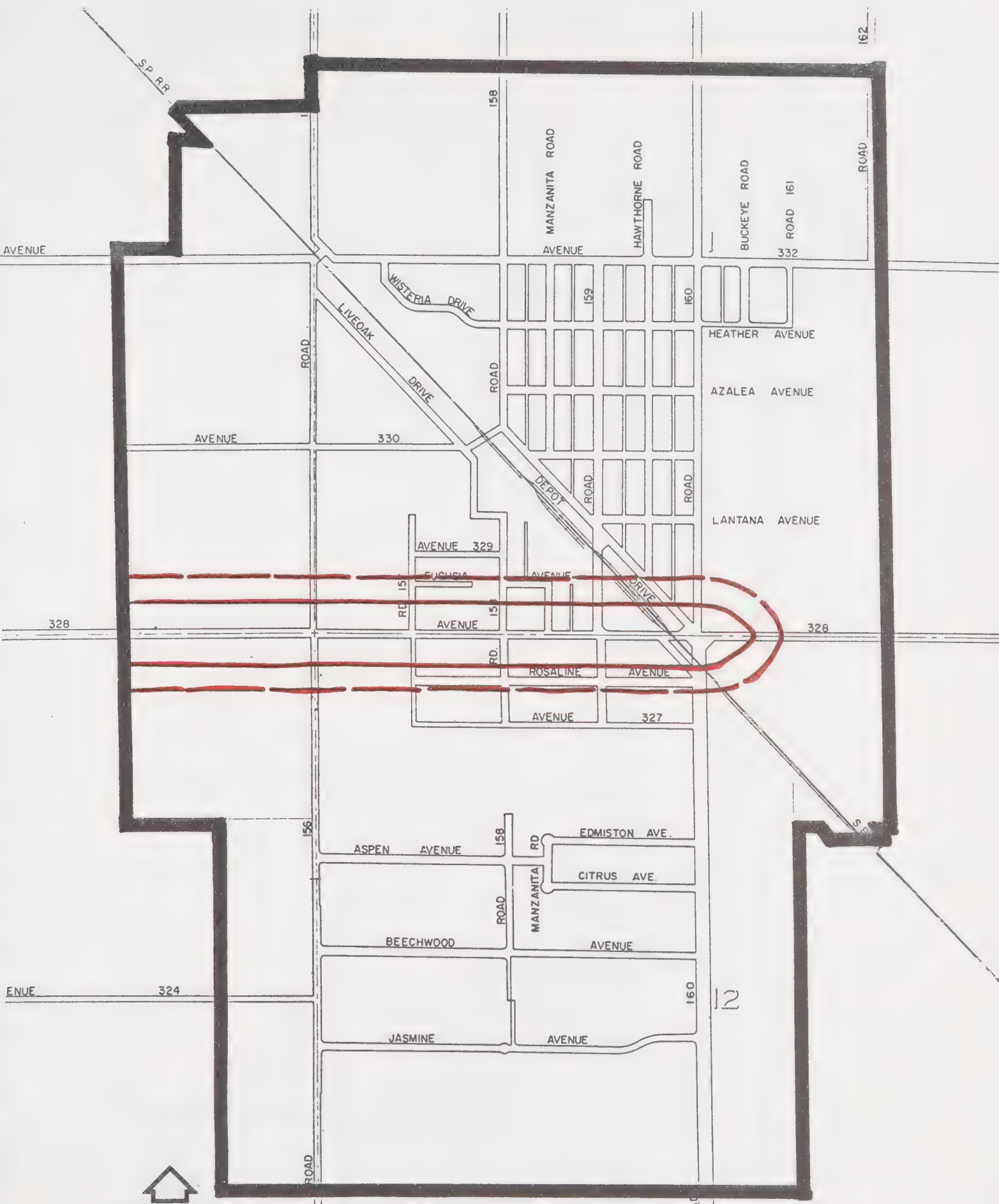
60 dB Ldn (2010)

**BBA/QUAD**

**WOODLAKE**

**B-6**





**NORTH**  
NOT TO SCALE

60 dB Ldn (1986)

60 dB Ldn (2010)

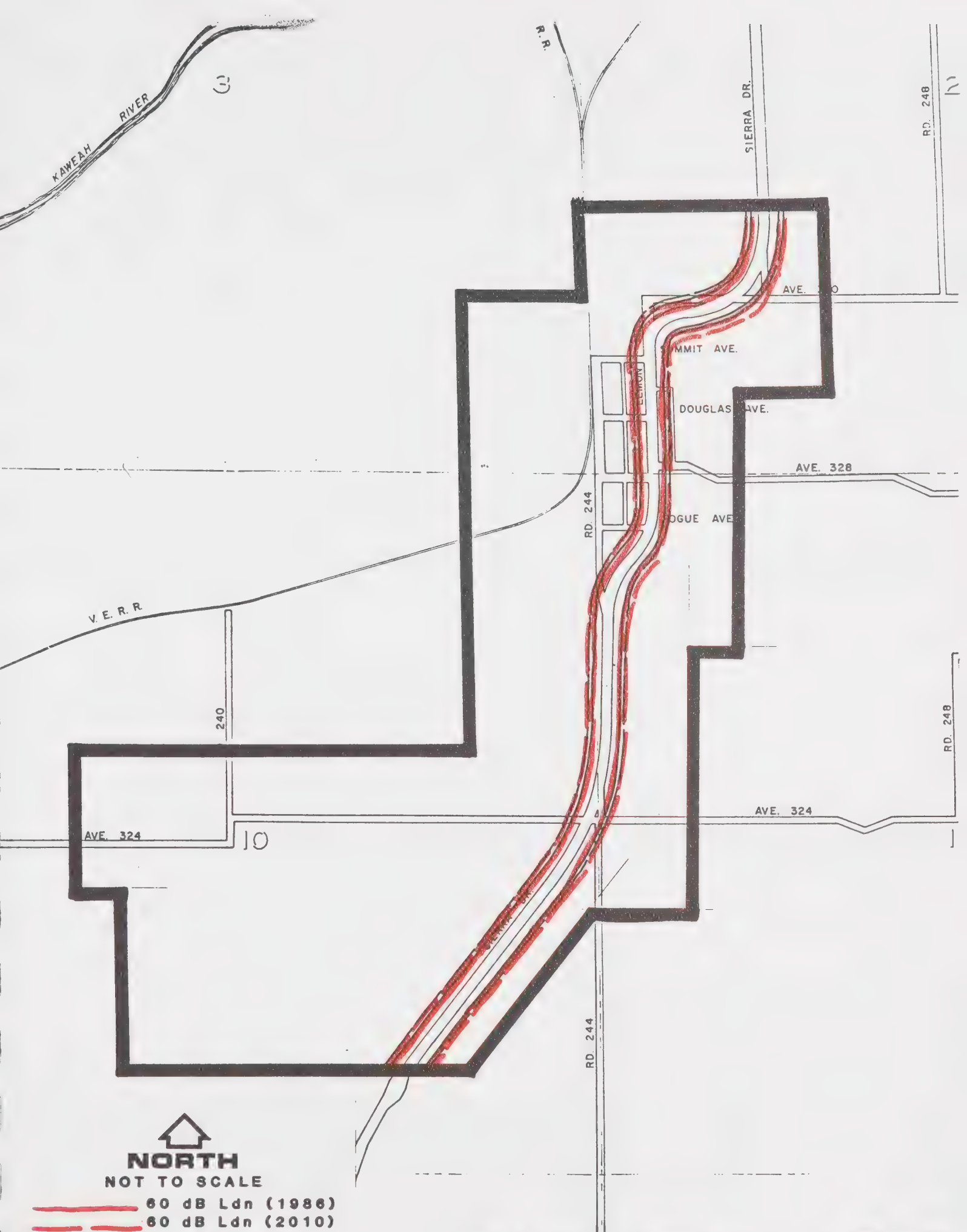
**BBA/QUAD**

**IVANHOE**

**B-7**







**NORTH**  
NOT TO SCALE

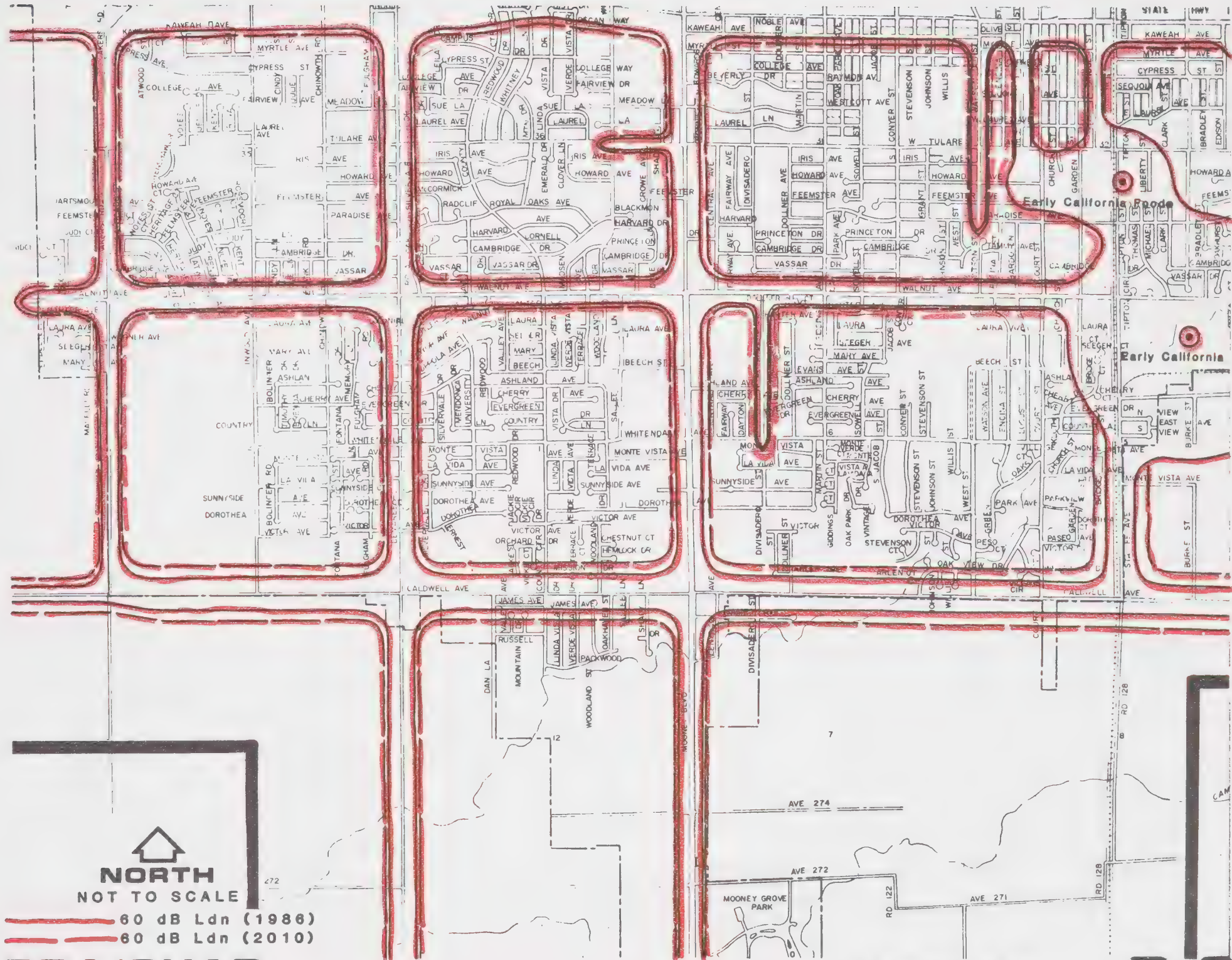
60 dB Ldn (1986)  
60 dB Ldn (2010)

**BBA/QUAD**

**LEMON COVE**

**B-8**









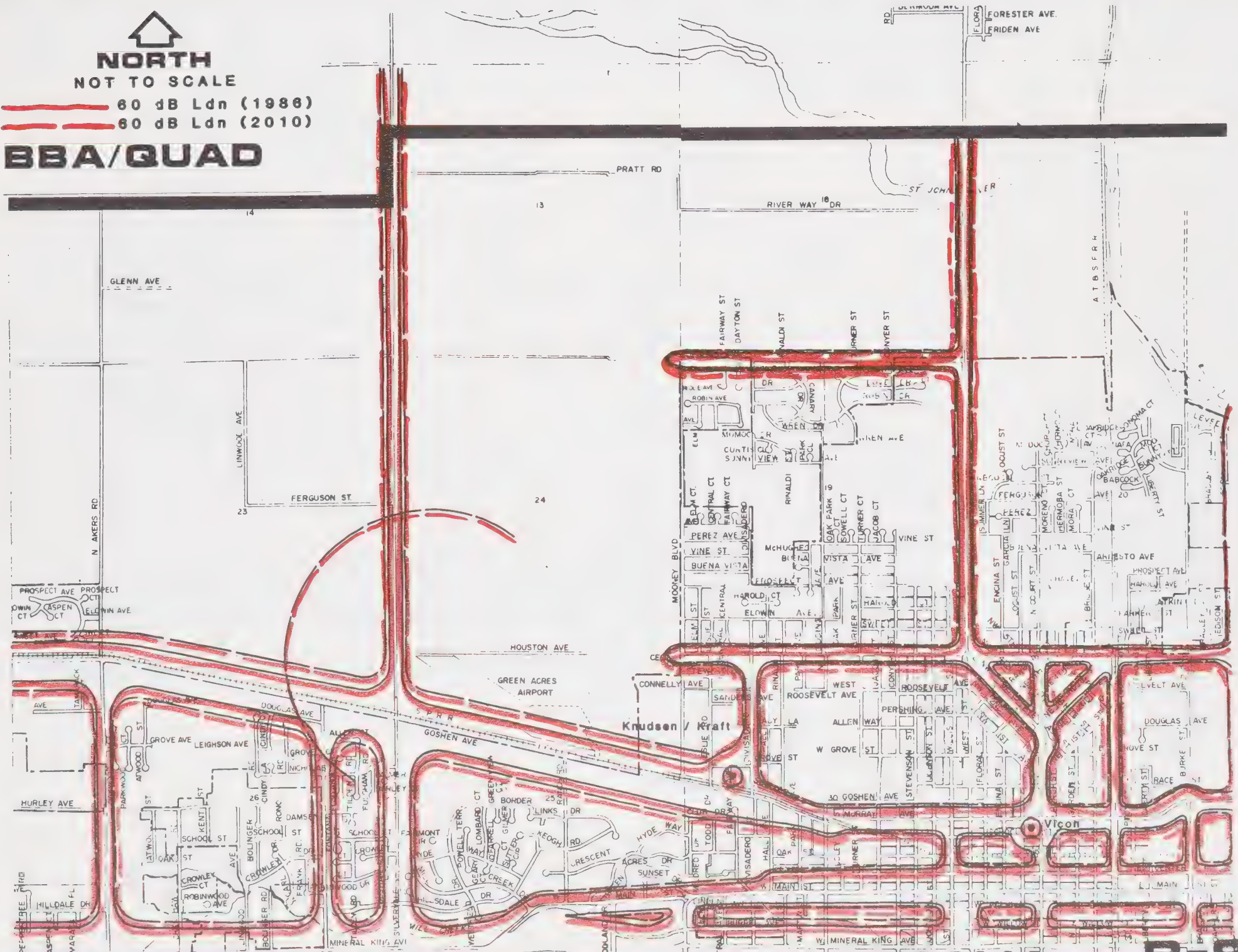


**NORTH**  
NOT TO SCALE

60 dB Ldn (1986)

60 dB Ldn (2010)

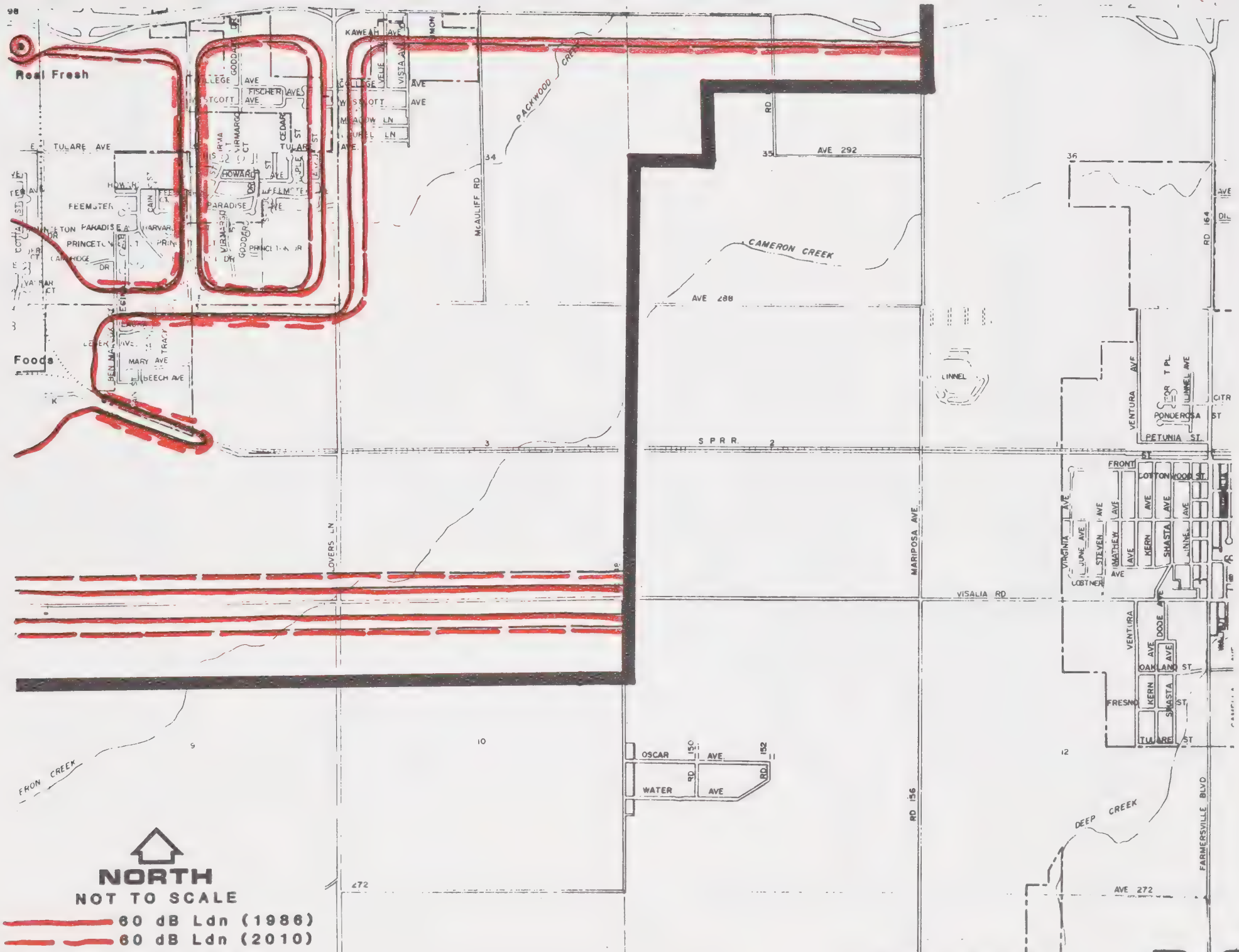
**BBA/QUAD**




**VISALIA**

**B-9**





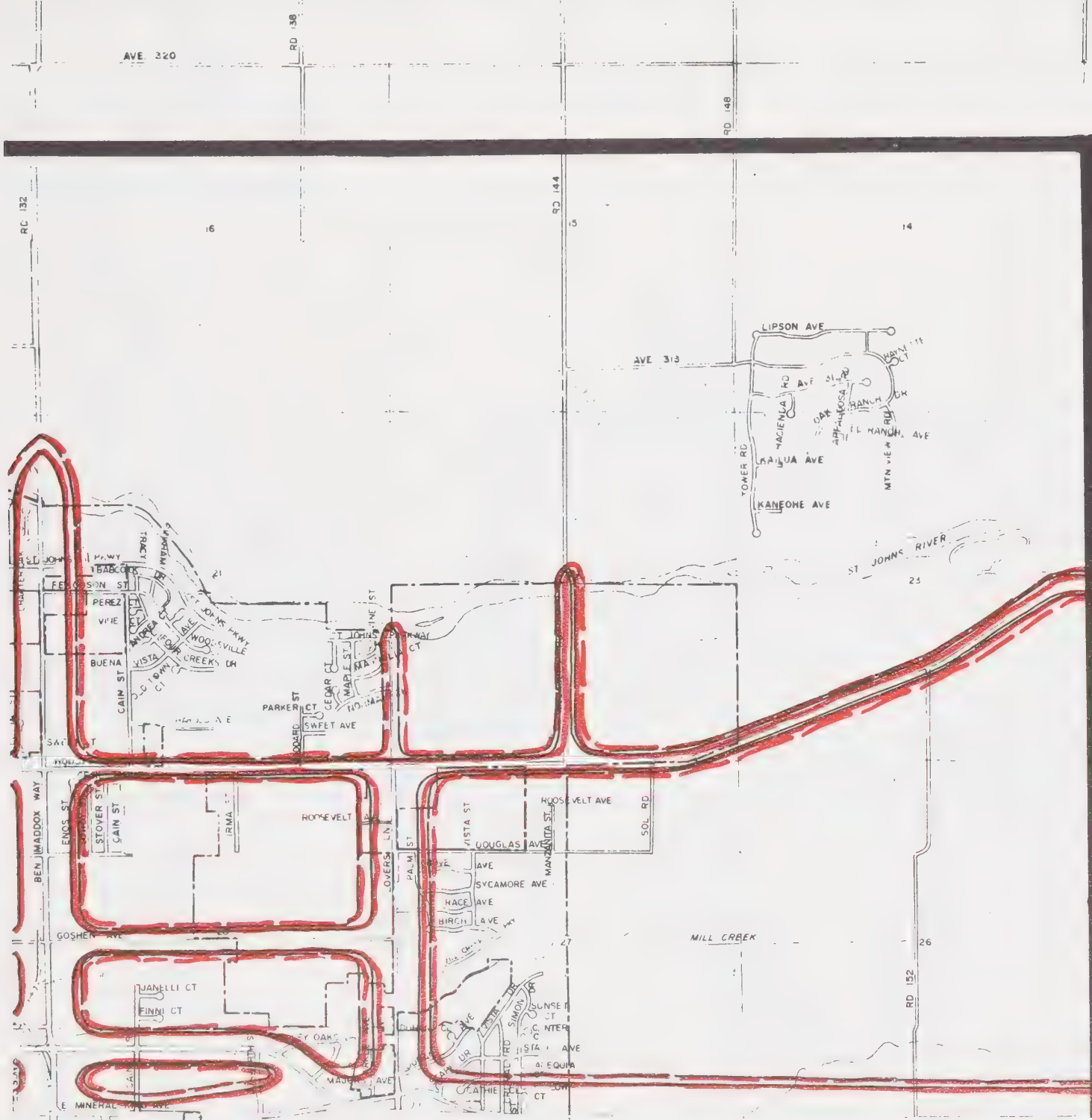
  
**NORTH**  
NOT TO SCALE  
—— 60 dB Ldn (1986)  
—— 60 dB Ldn (2010)  
**BBA/QUAD**











Ave 320

Ave 320

RD 148

RD 144

RD 144

Ave 313

LIPSON AVE

YACIENLA RD

KANEONE AVE

ST. JOHN'S RIVER

Ave 309

RD 144

  
**NORTH**  
NOT TO SCALE

 80 dB Ldn (1986)  
 80 dB Ldn (2010)

**BBA/QUAD**

**VISALIA**

**B-9**



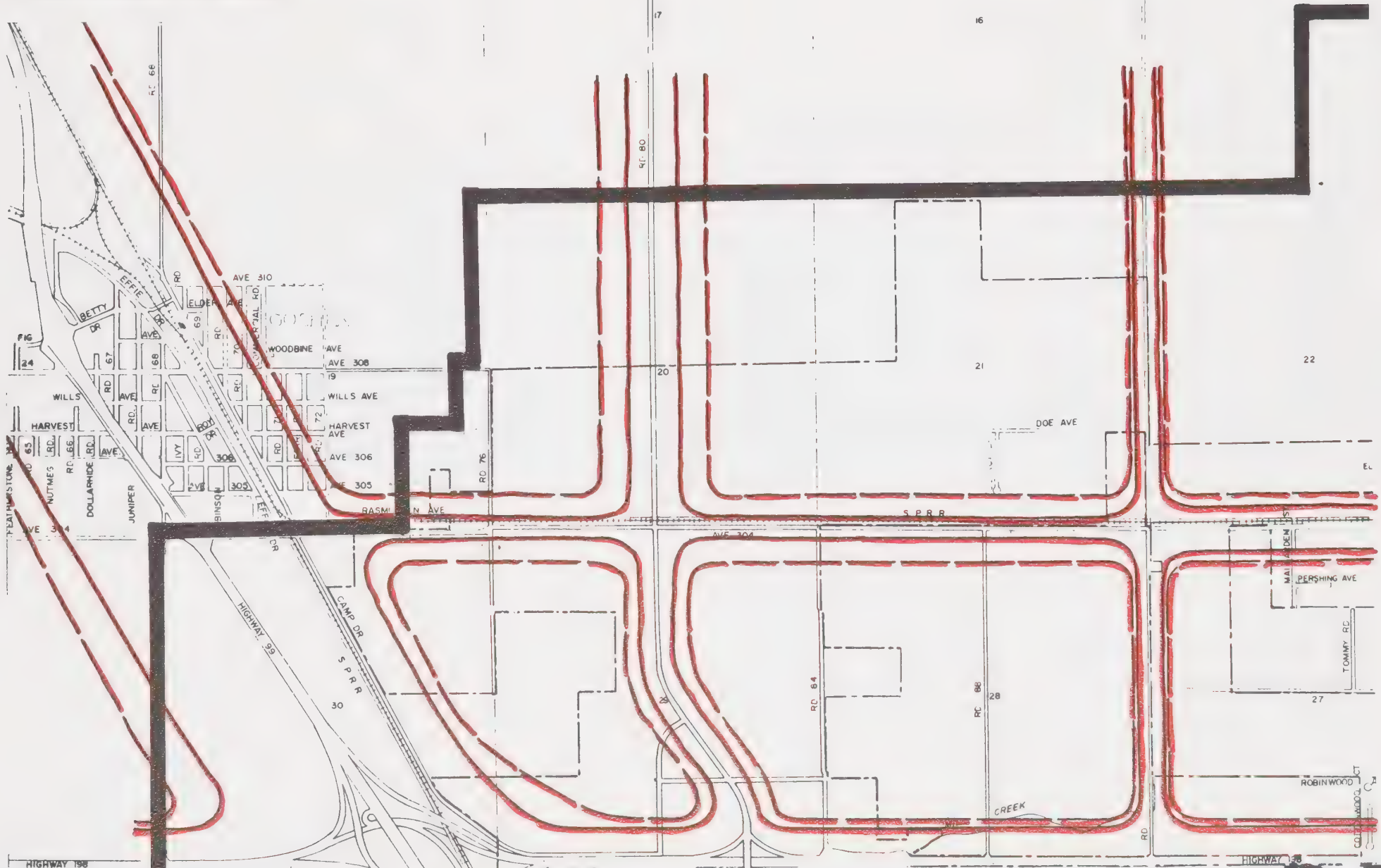




**NORTH**  
NOT TO SCALE

60 dB Ldn (1988)  
60 dB Ldn (2010)

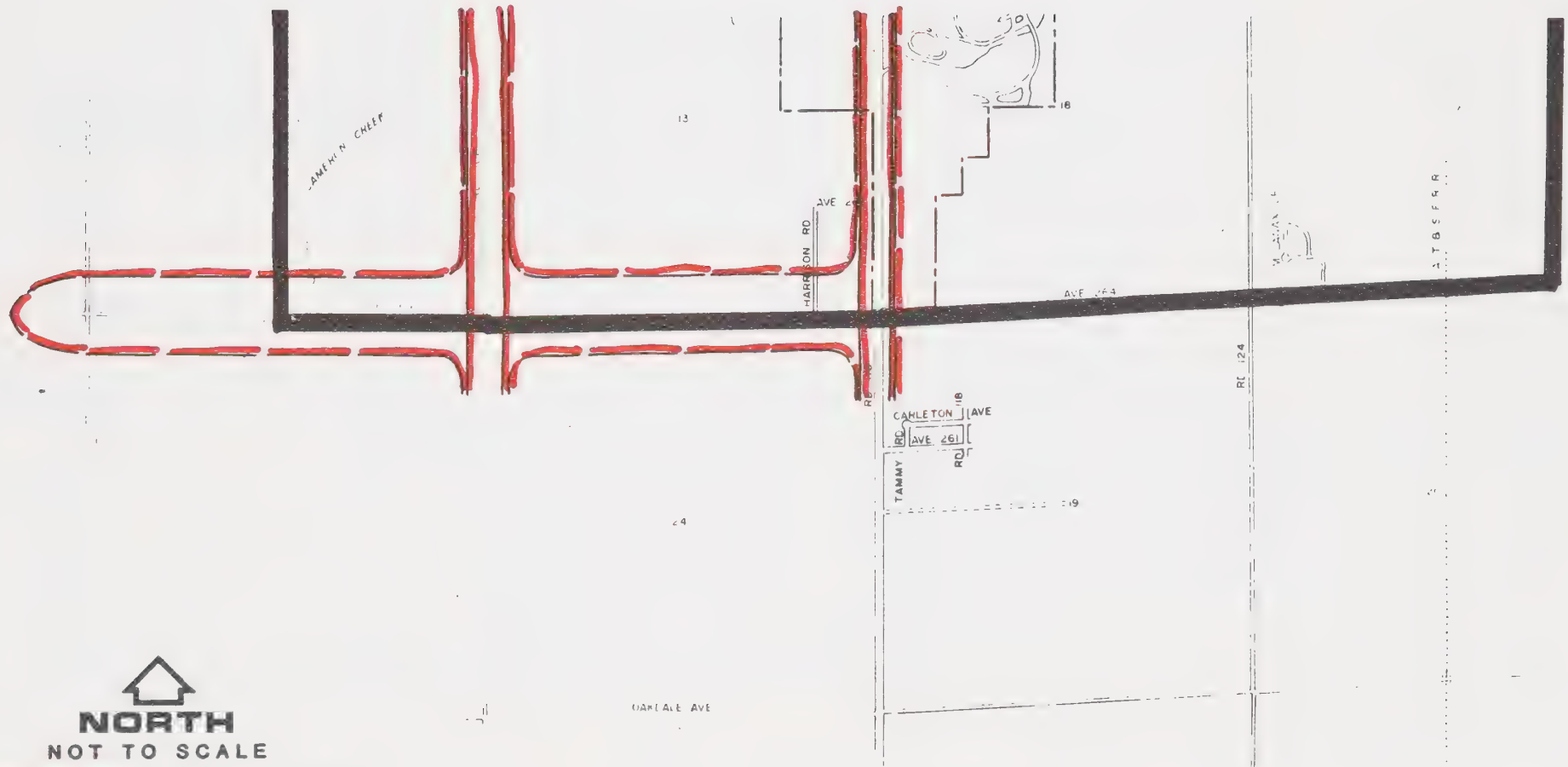
**BBA/QUAD**



**VISALIA**

**B-9**





**NORTH**

NOT TO SCALE

— 60 dB Ldn (1986)  
- - 60 dB Ldn (2010)

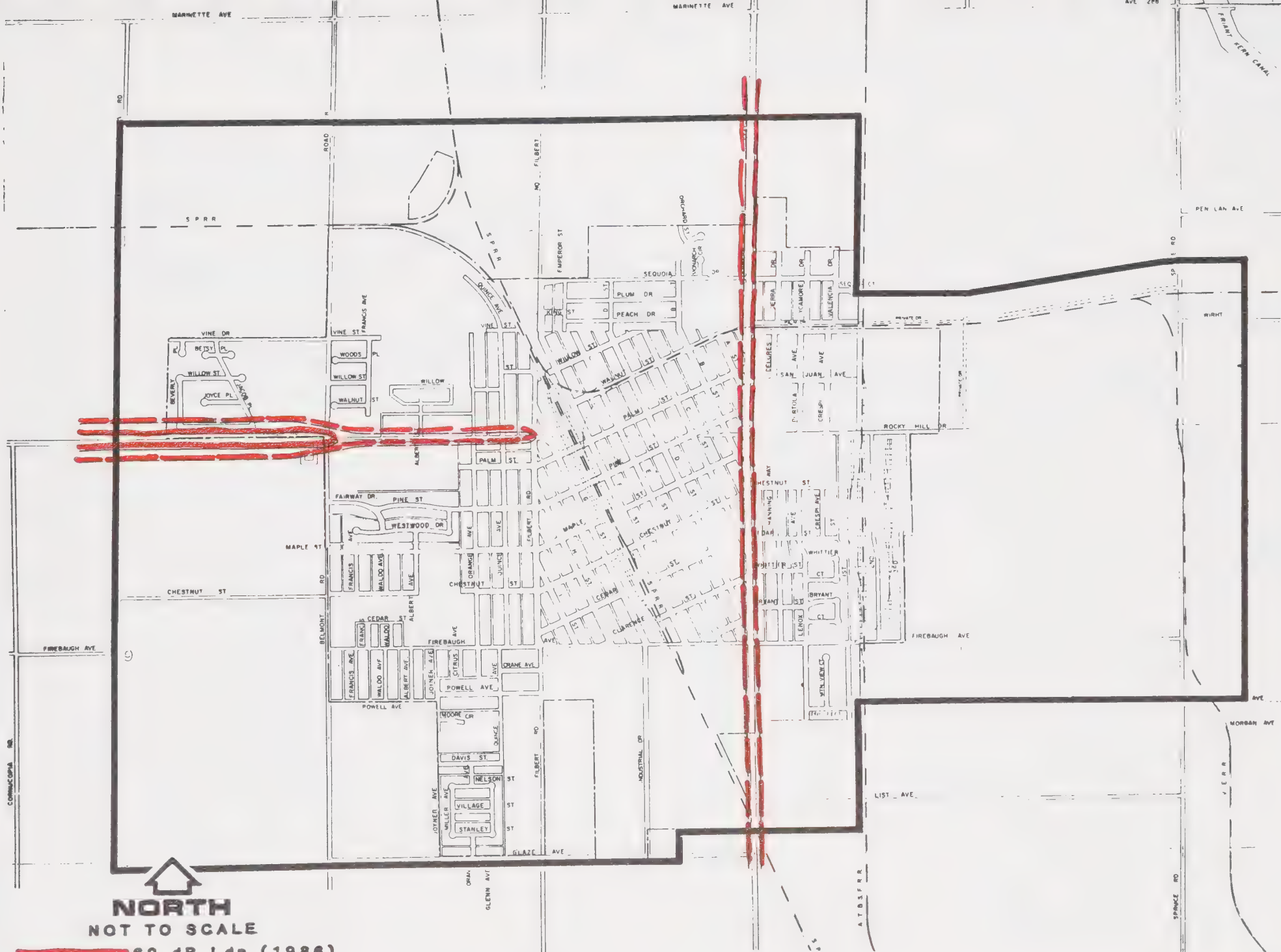
**BBA/QUAD**

**VISALIA**

**B-9**





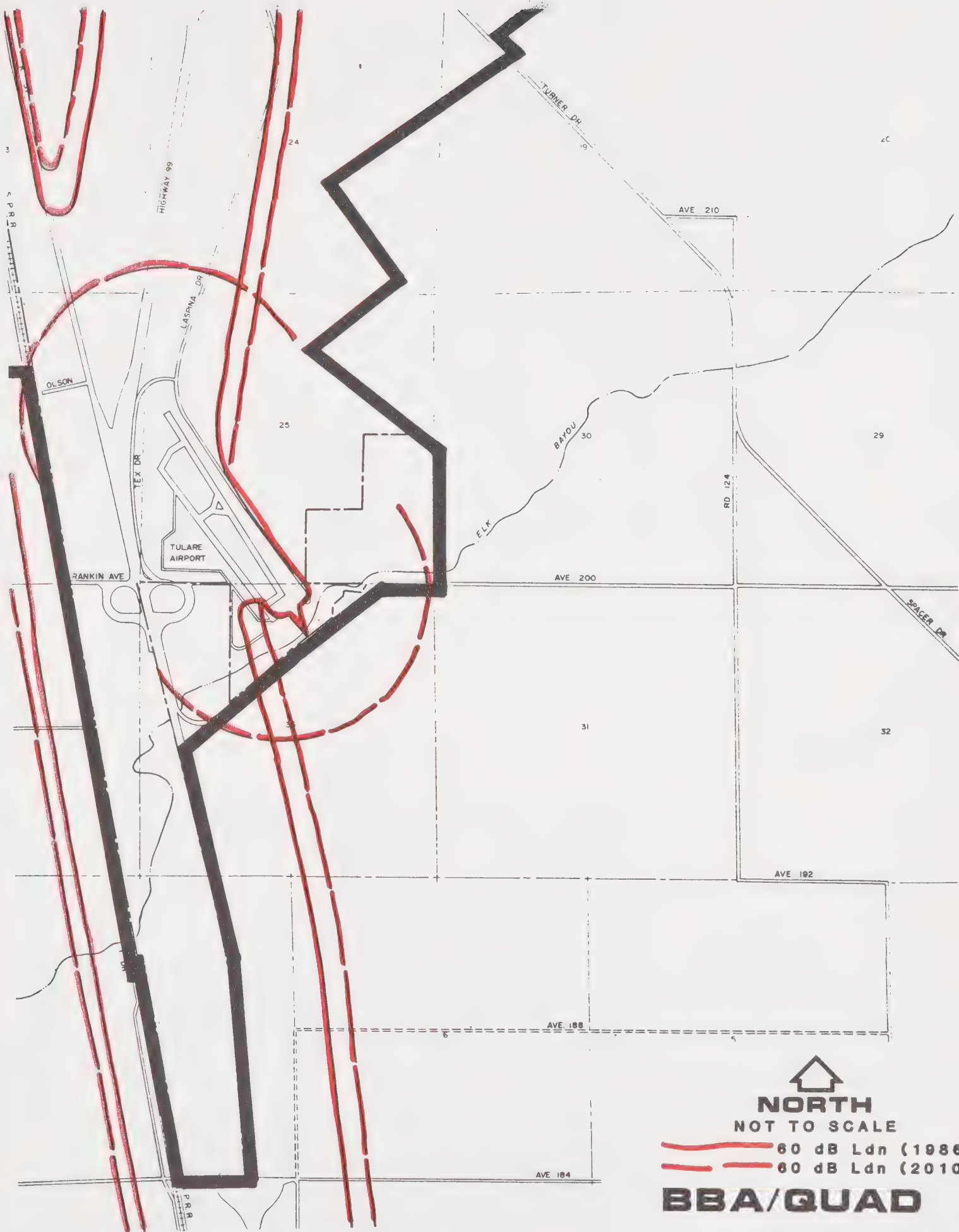


60 dB Ldn (1988)  
60 dB Ldn (2010)

**BBA/QUAD**

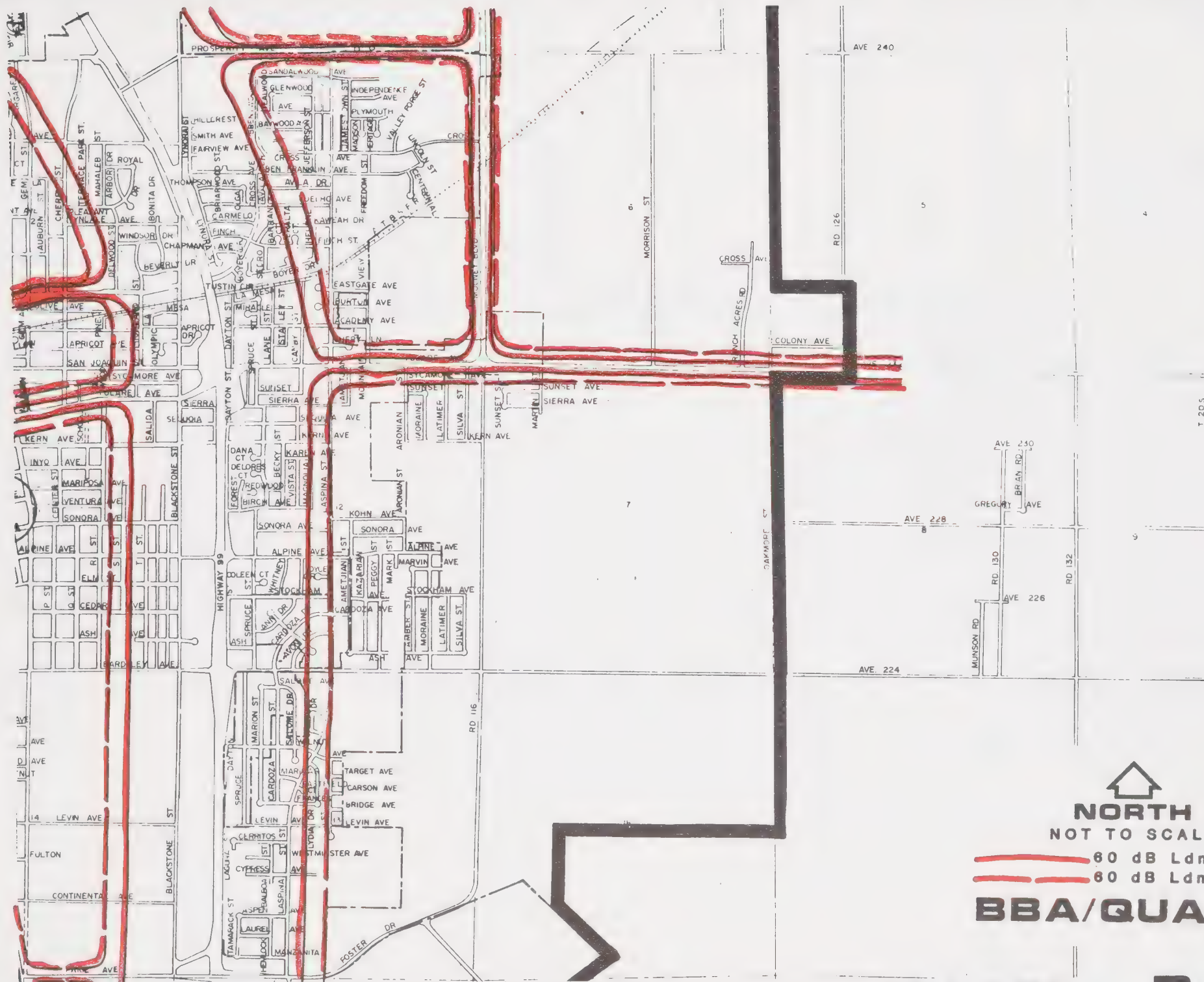
**EXETER B-10**











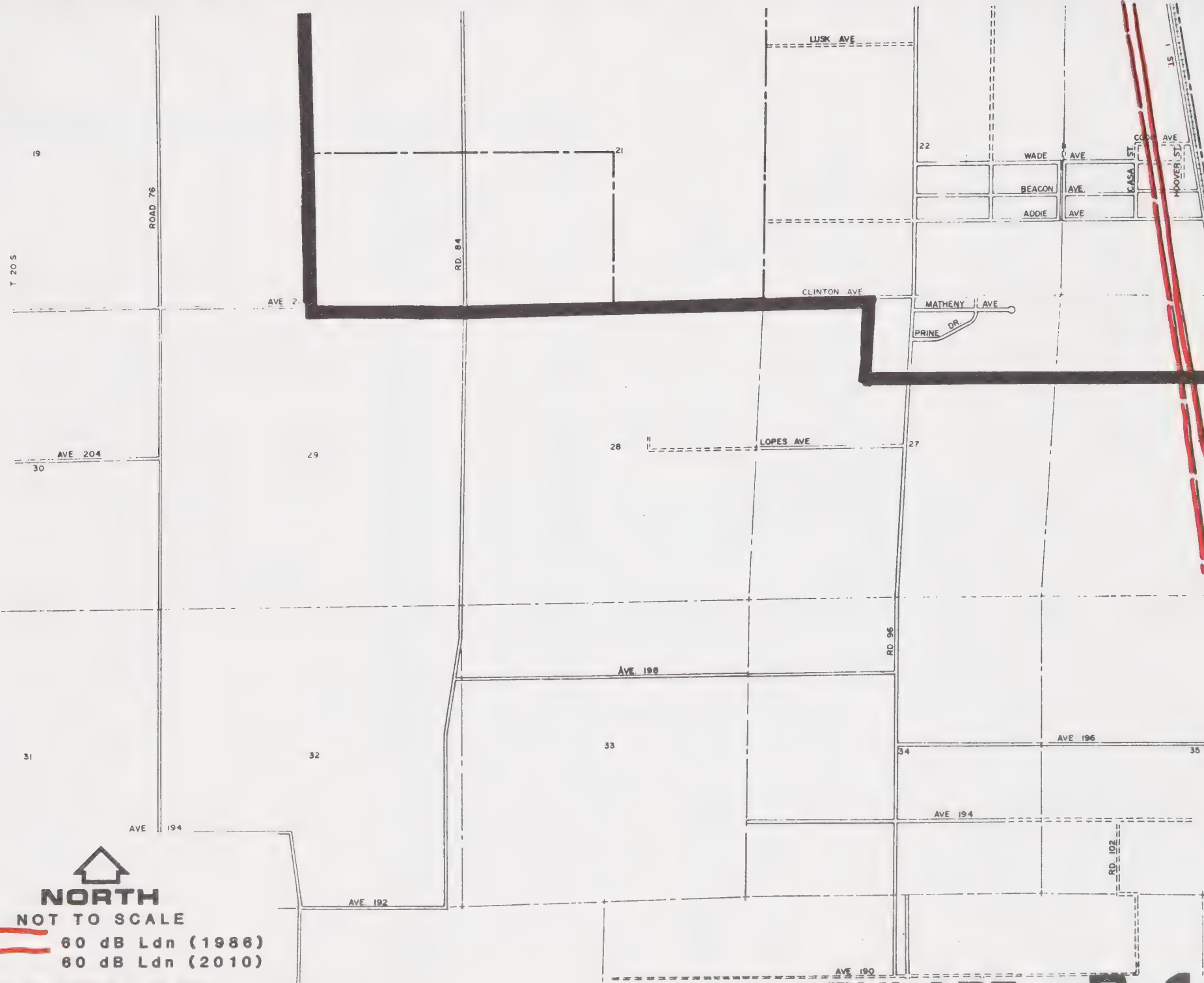


  
**NORTH**  
NOT TO SCALE  
60 dB Ldn (1988)  
60 dB Ldn (2010)  
**BBA/QUAD**

**TULARE B-11**



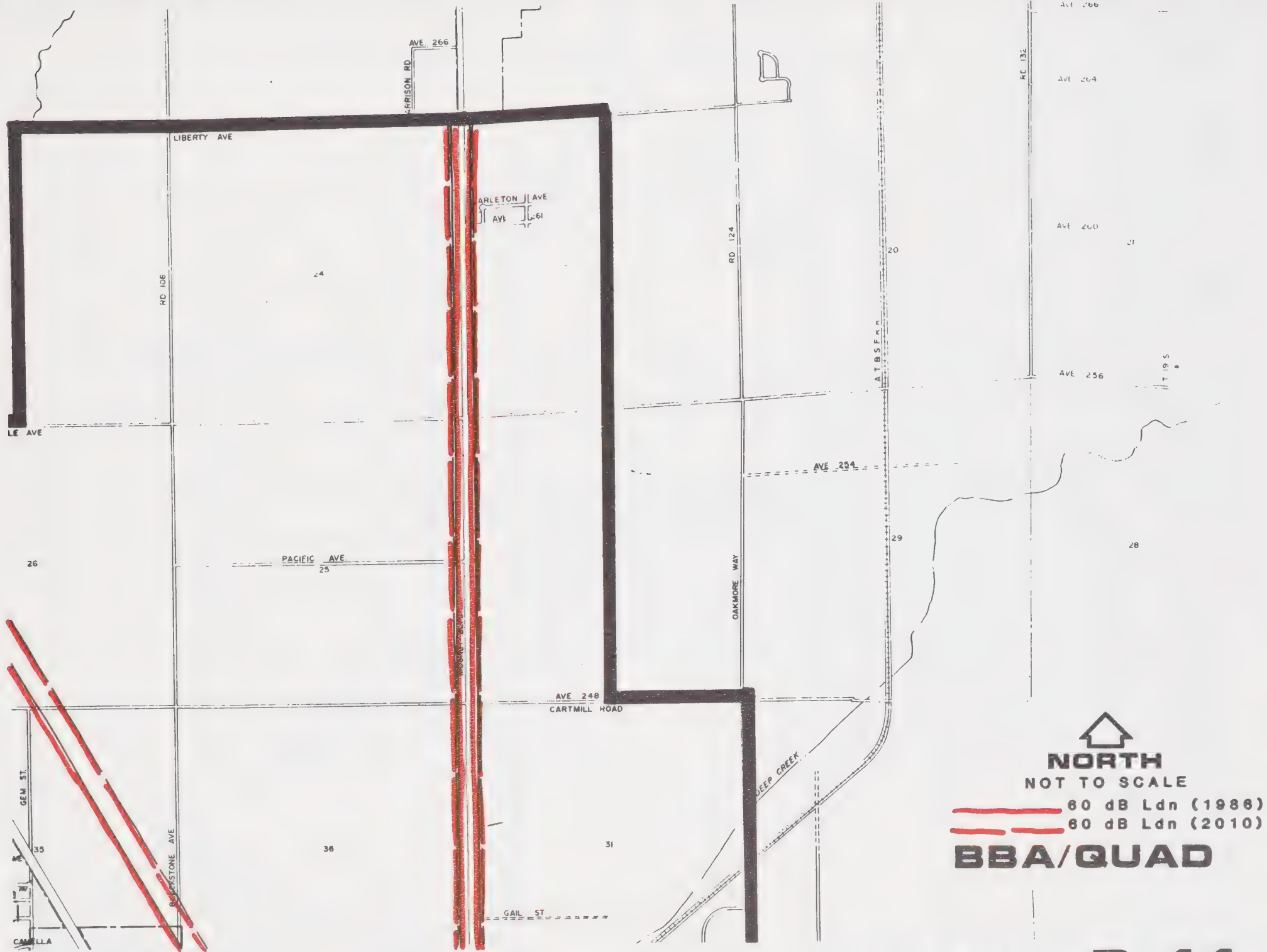
  
**NORTH**  
NOT TO SCALE  
60 dB Ldn (1988)  
60 dB Ldn (2010)  
**BBA/QUAD**



**TULARE B-11**

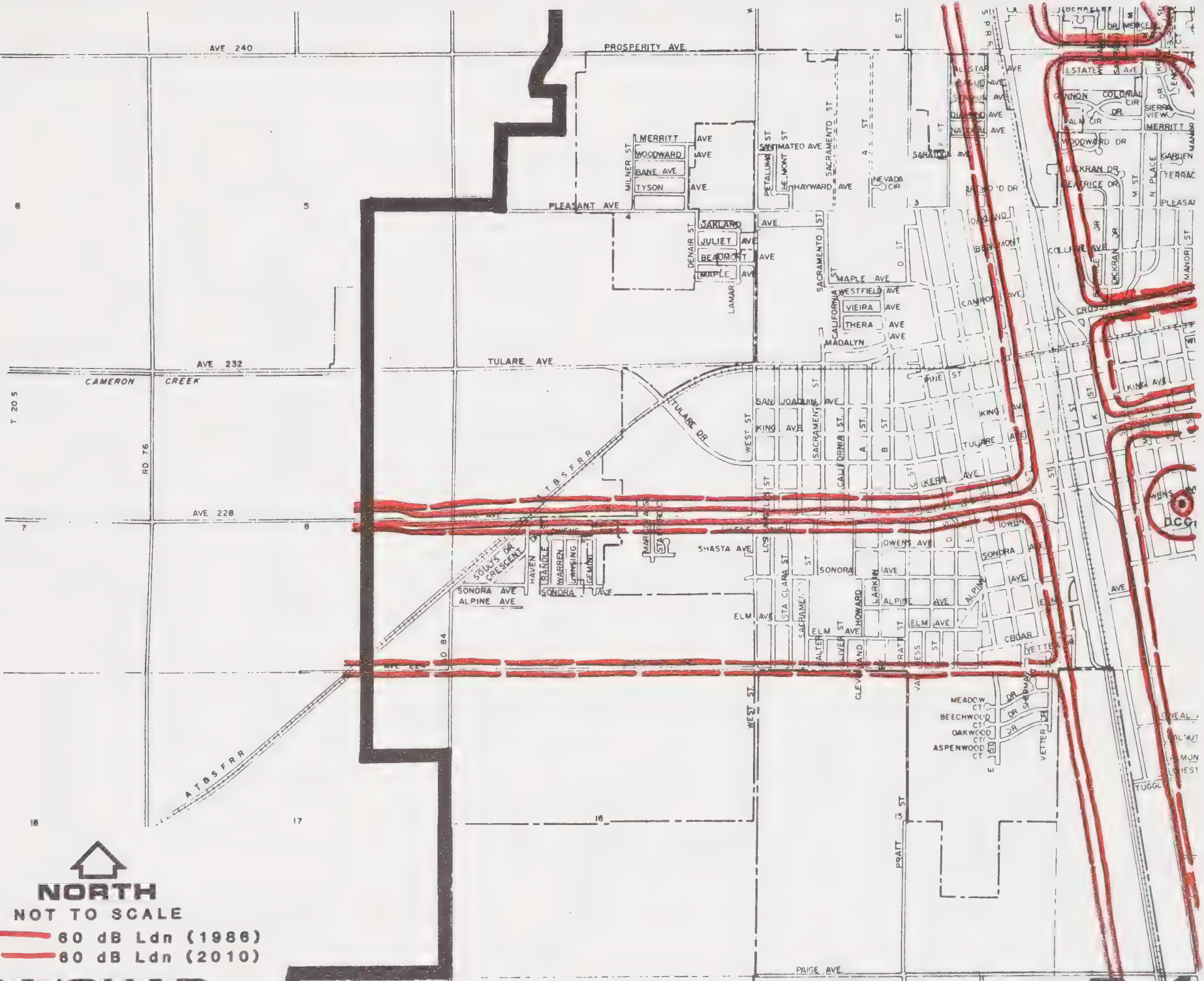






**TULARE B-11**





  
**NORTH**  
NOT TO SCALE




60 dB Ldn (1986)  
60 dB Ldn (2010)

**BBA/QUAD**

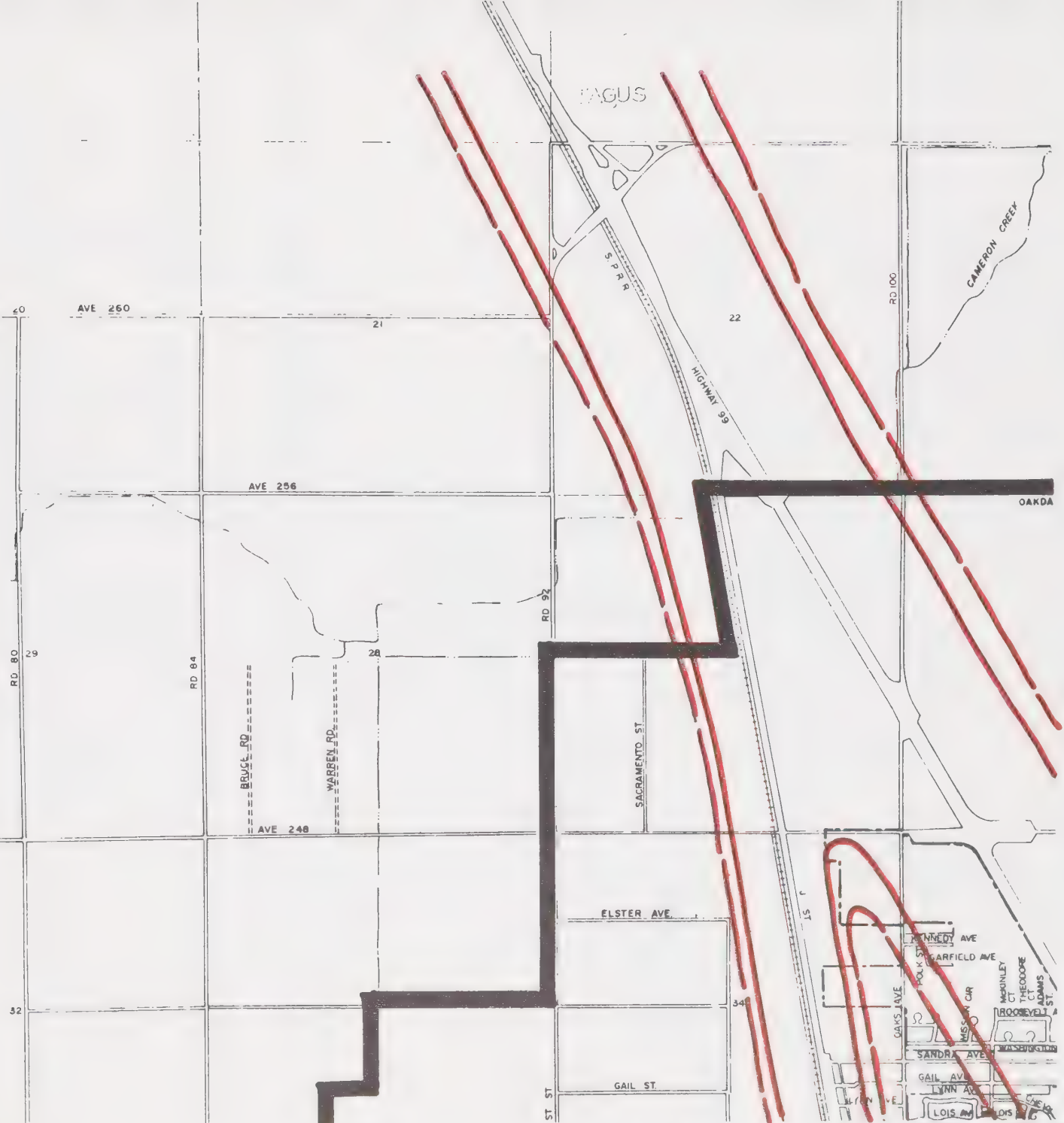
**TULARE B-11**





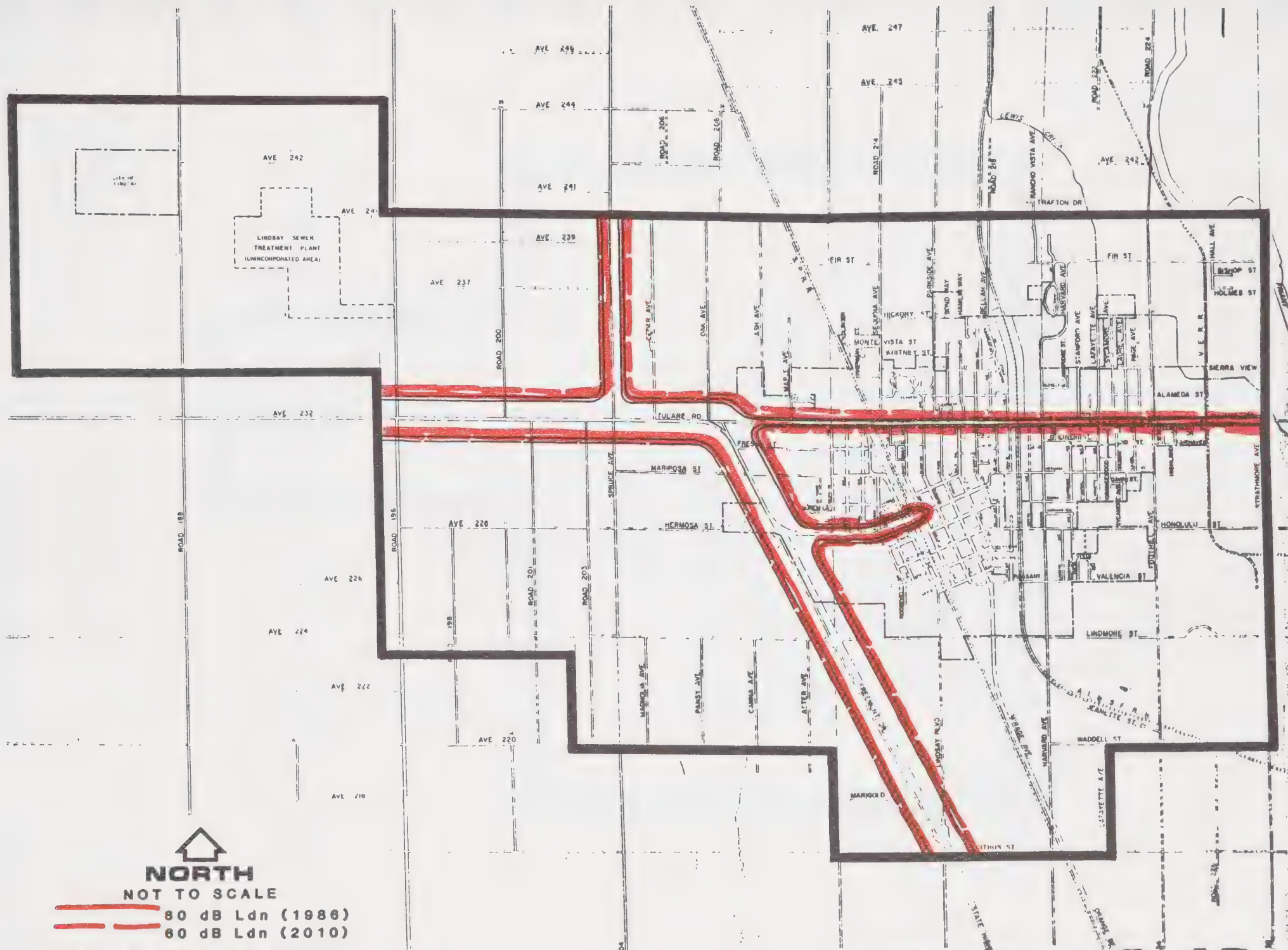
  
**NORTH**  
 NOT TO SCALE  
 60 dB Ldn (1988)  
 60 dB Ldn (2010)

**BBA/QUAD**



**TULARE B-11**





**NORTH**  
NOT TO SCALE

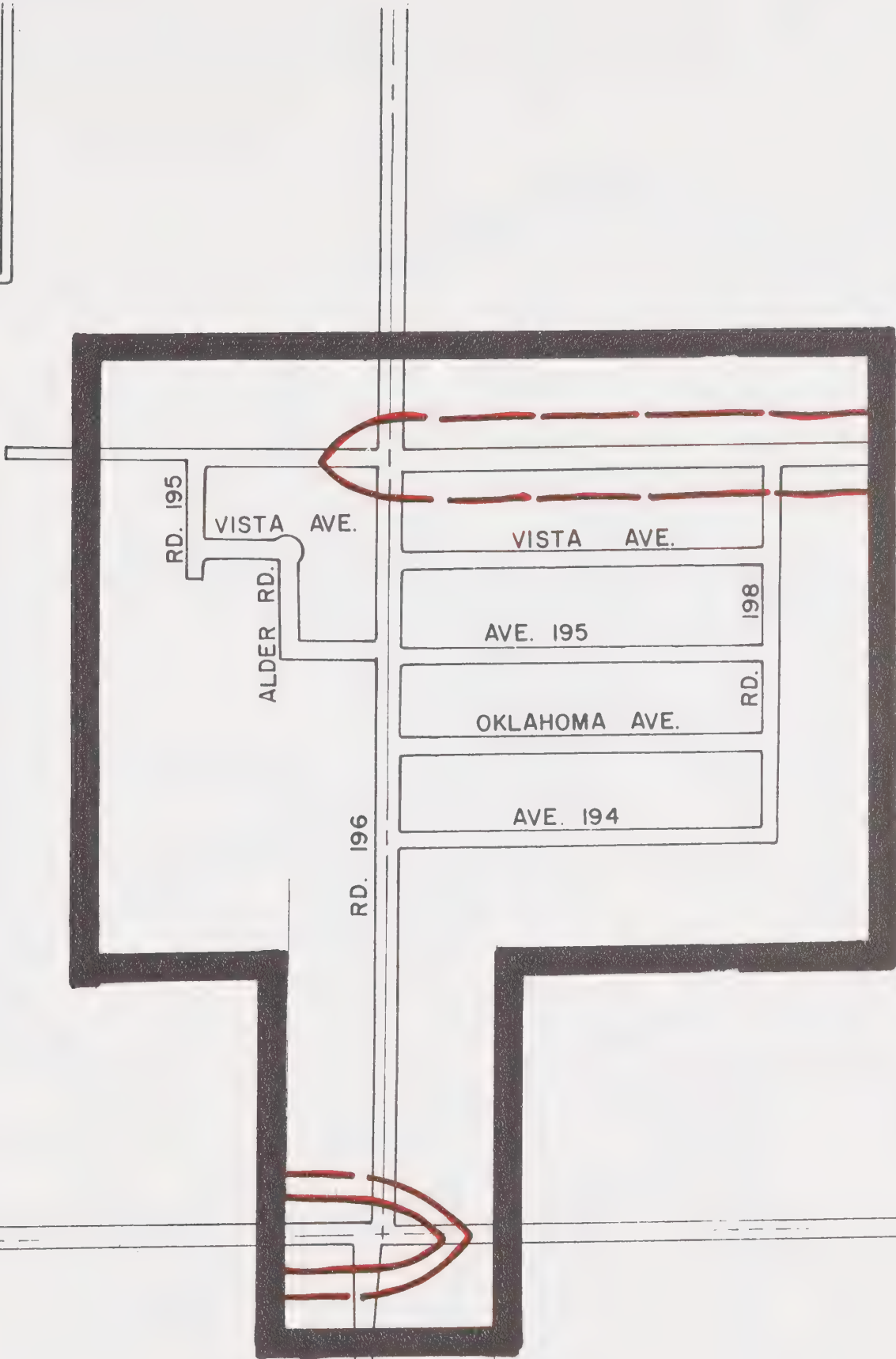
80 dB Ldn (1986)  
80 dB Ldn (2010)

**BBA/QUAD**

**LINDSAY B-12**







E. 196

RD. 195

VISTA AVE.

ALDER RD.

VISTA AVE.

AVE. 195

OKLAHOMA AVE.

AVE. 194

198

RD.

RD. 196

  
**NORTH**  
NOT TO SCALE

60 dB Ldn (1988)  
60 dB Ldn (2010)

**BBA/QUAD**

**PLAINVIEW**

**B-13**

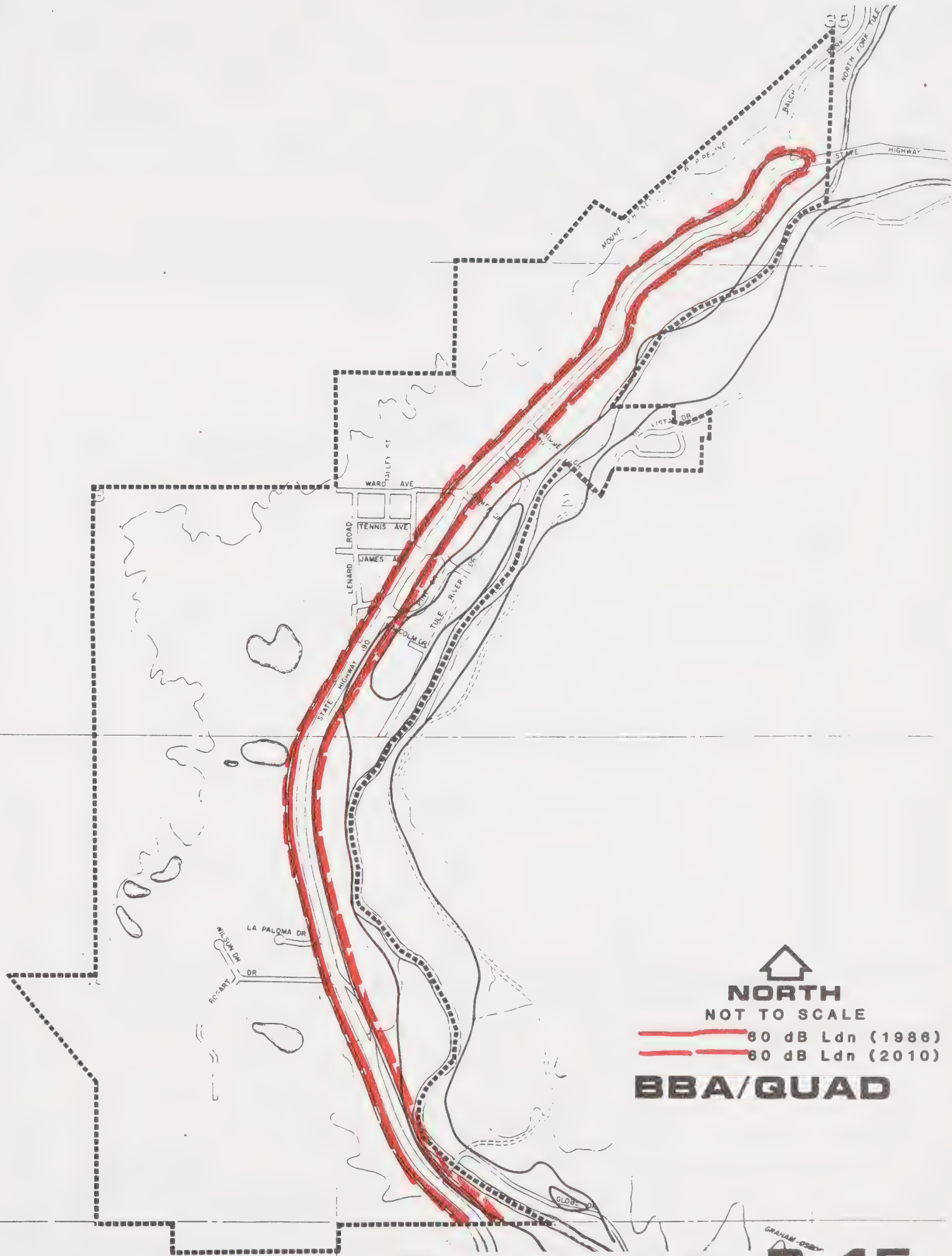
RD. 200











**NORTH**

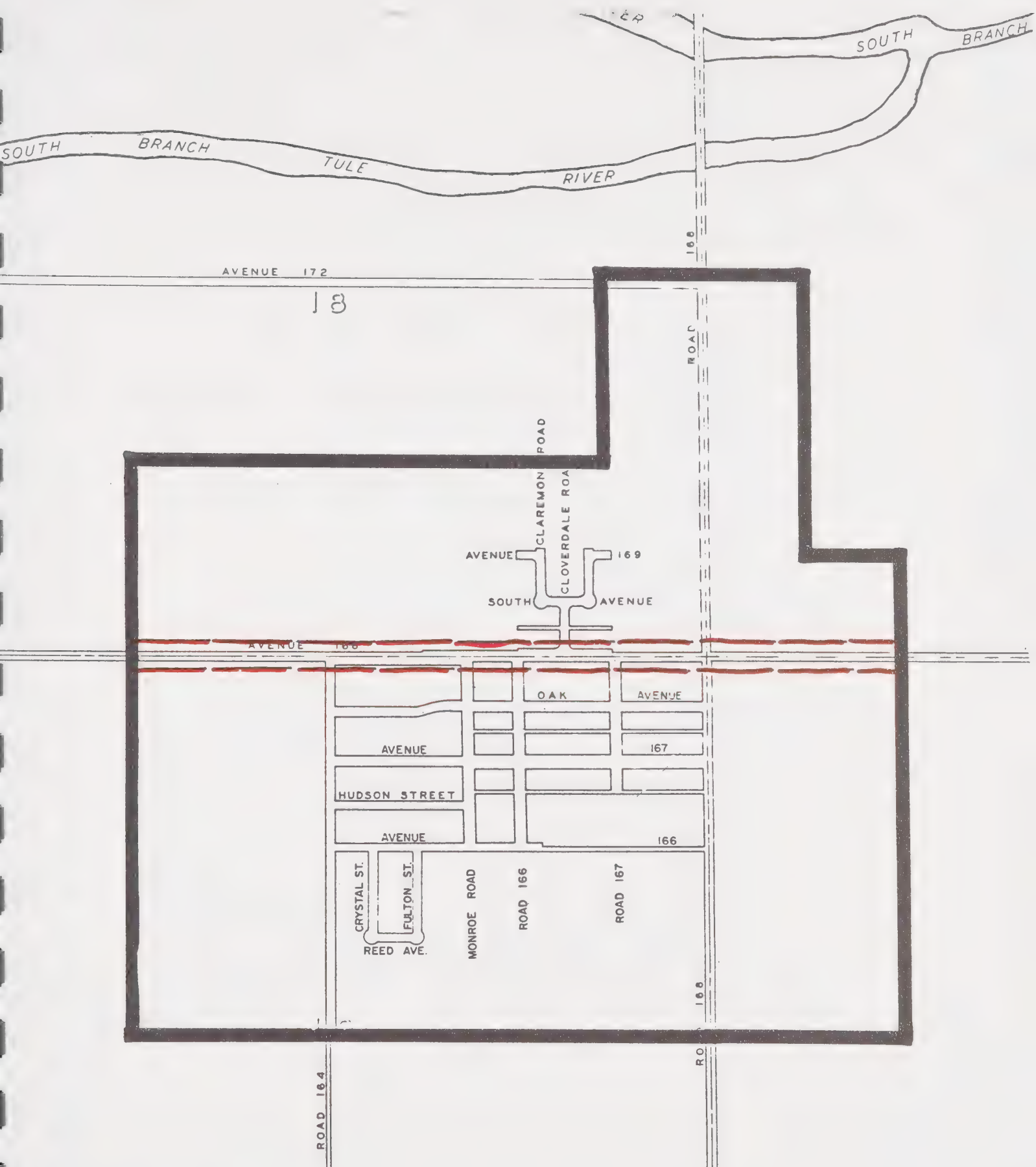
NOT TO SCALE

— 60 dB Ldn (1986)  
— 60 dB Ldn (2010)

**BBA/QUAD**

**SPRINGVILLE B-15**





NOT TO SCALE

60 dB Ldn (1986)

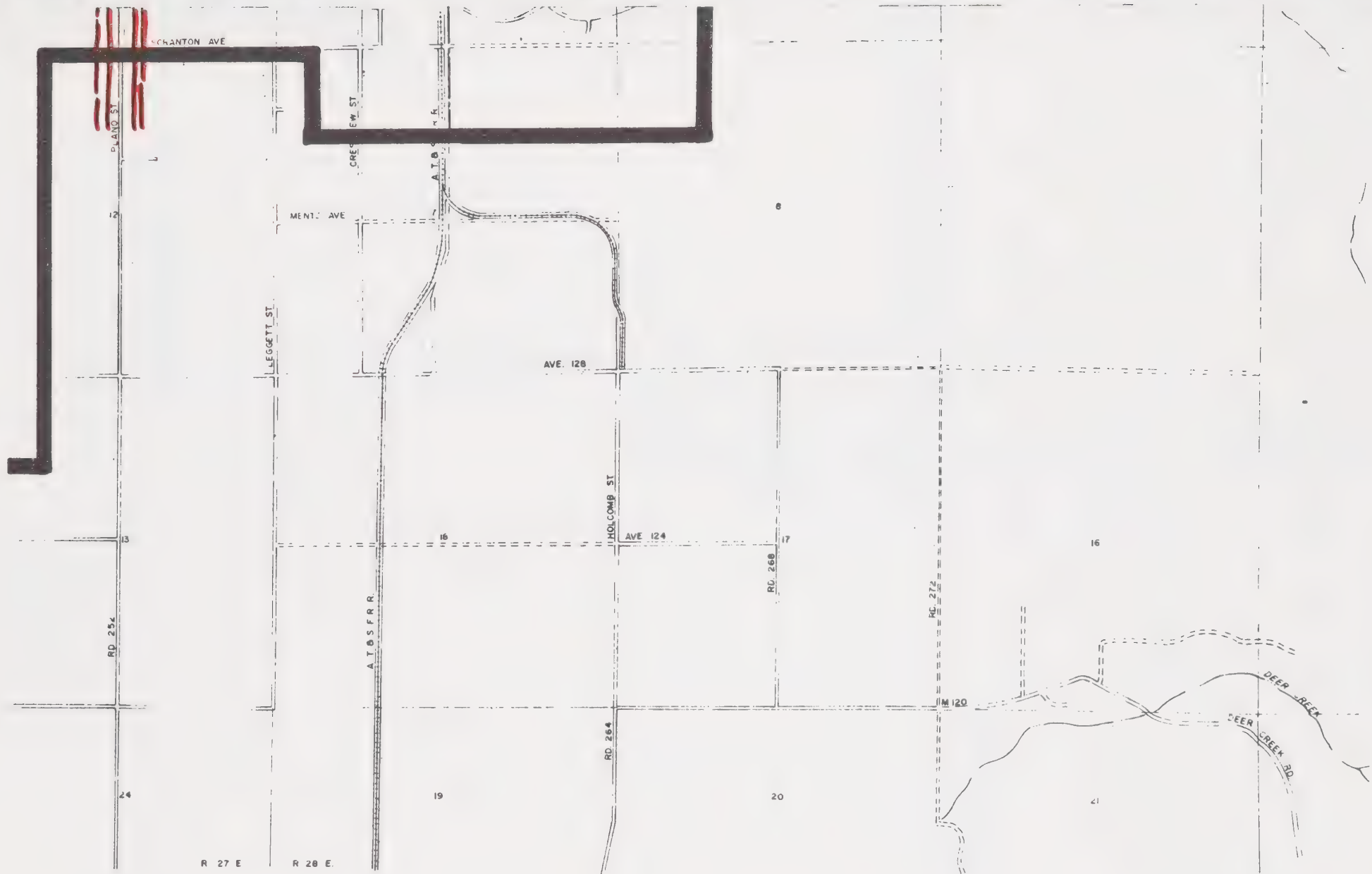
60 dB Ldn (2010)

BBA/QUAD

WOODVILLE B-16







**NORTH**

NOT TO SCALE

— 60 dB Ldn (1986)  
 - - 60 dB Ldn (2010)

**BBA/QUAD**

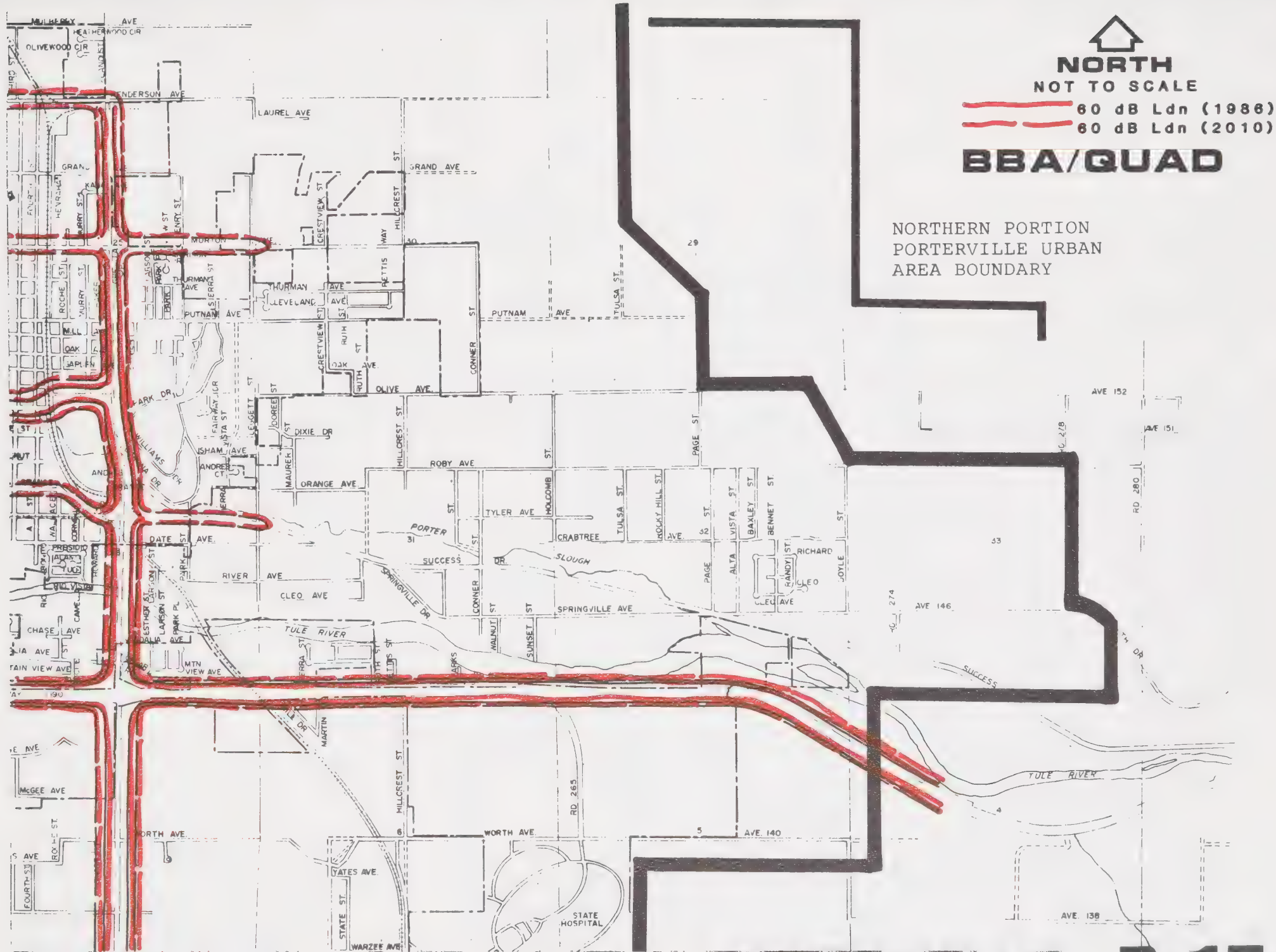
**PORTERVILLE B-17**











**NORTH**  
NOT TO SCALE

60 dB Ldn (1986)  
60 dB Ldn (2010)

**BBA/QUAD**

NORTHERN PORTION  
PORTERVILLE URBAN  
AREA BOUNDARY









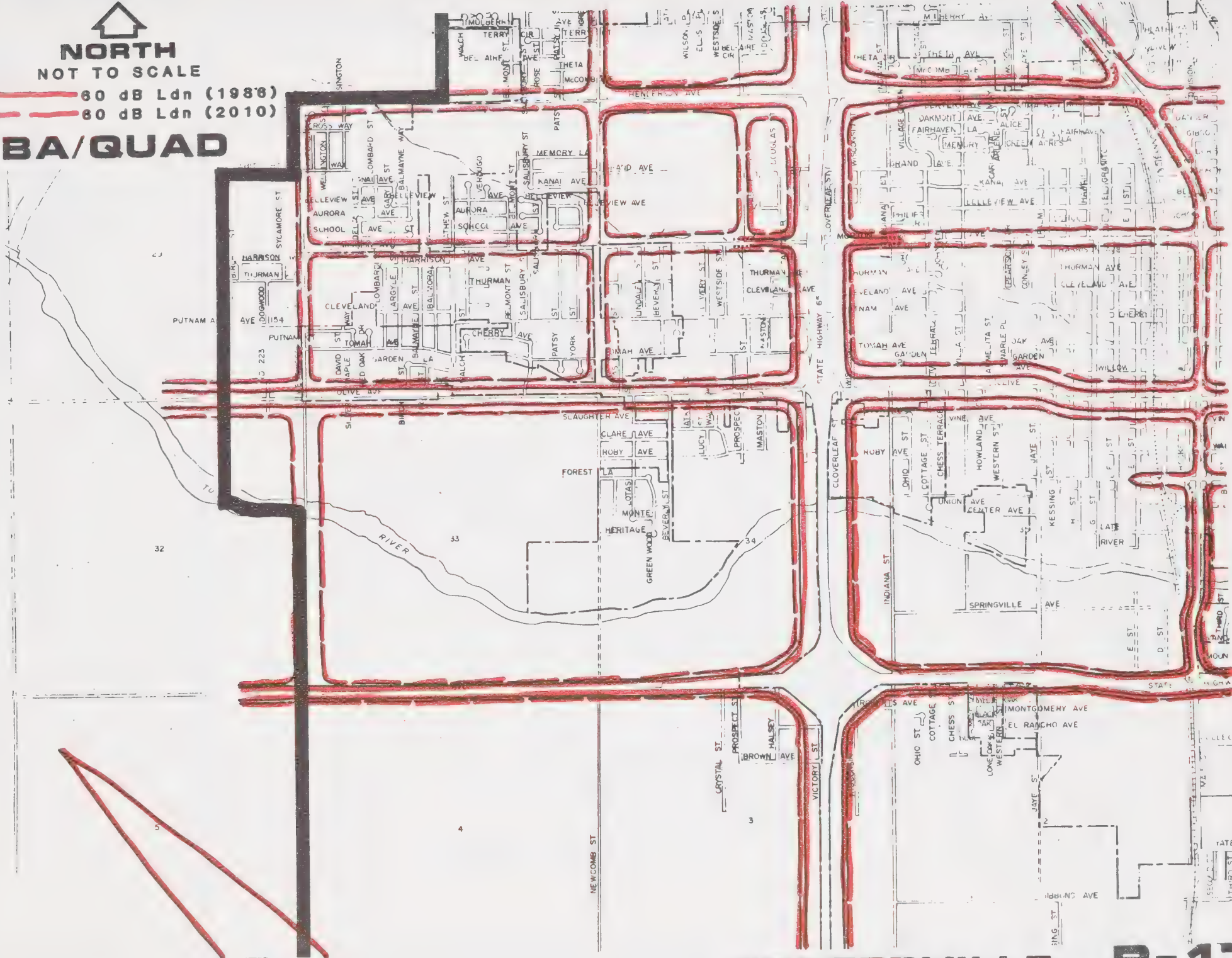


**NORTH**  
NOT TO SCALE

60 dB Ldn (1988)

60 dB Ldn (2010)

**BBA/QUAD**



**PORTERVILLE**

**B-17**





**NORTH**  
NOT TO SCALE

80 dB Ldn (1986)  
80 dB Ldn (2010)

**BBA/QUAD**

**TIPTON B-18**







**NORTH**

NOT TO SCALE

60 dB Ldn (1988)

60 dB Ldn (2010)

**BBA/QUAD**

AVE. 152

AVE. 152

AVE. 151

AVE. 150

RD. 190

RD. 196

AVE. 148

34

35

RD. 190

IMPERIAL RD.

RD. 191

KILROY RD.

AVE. 146

AVE. 147

AVE. 145

RD. 193

RD. 193

RD. 192

RD. 193

STATE HWY. 194

STATE HWY. 194



T 22.5 V 7228

HARMON FIELD

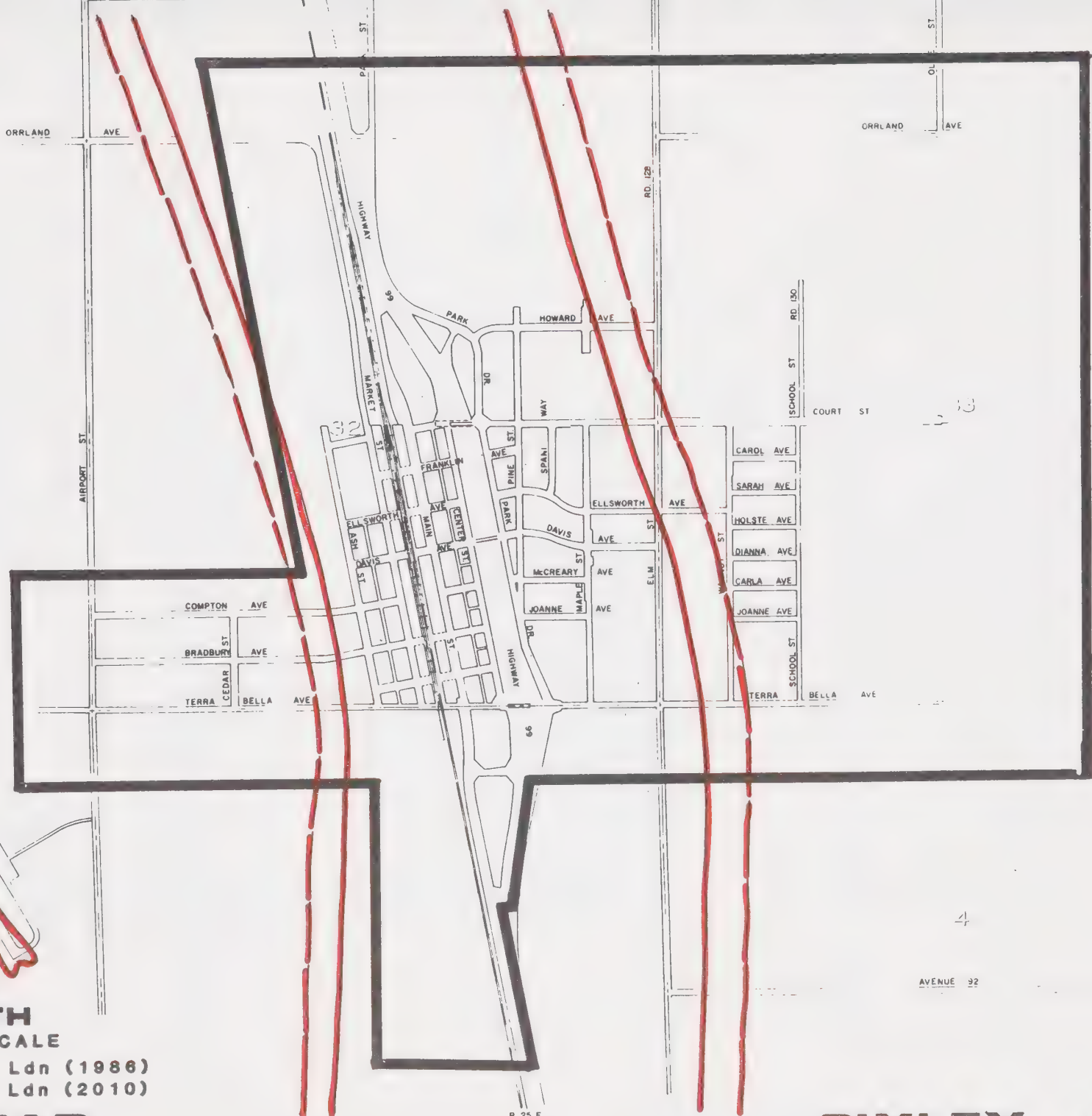
6



**NORTH**  
NOT TO SCALE

80 dB Ldn (1986)  
80 dB Ldn (2010)

**BBA/QUAD**

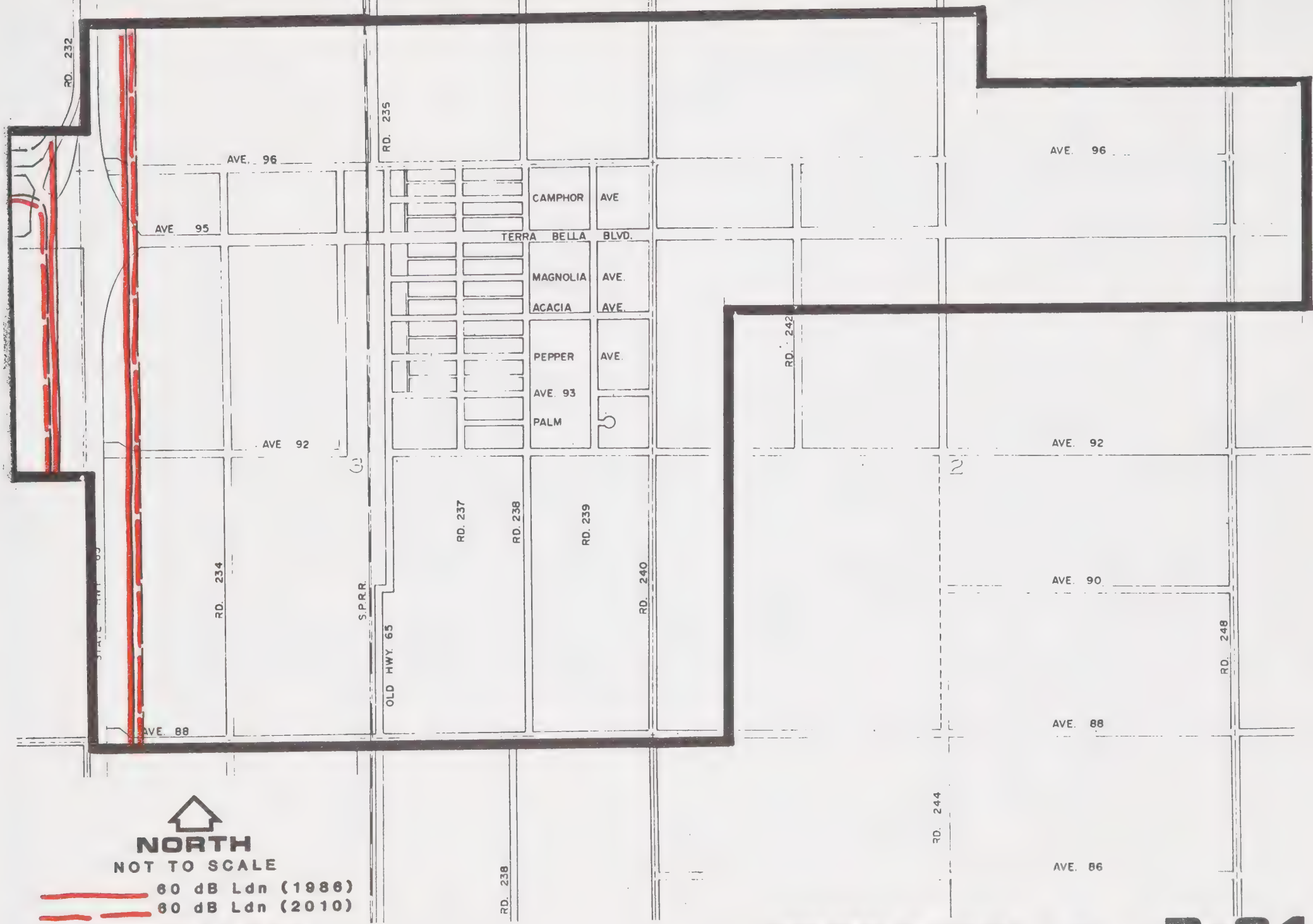


R 25 E

**PIXLEY B-20**







NORTH  
NOT TO SCALE

60 dB Ldn (1986)  
60 dB Ldn (2010)

**BBA/QUAD**

**TERRA BELLA B-21**





  
**NORTH**  
 NOT TO SCALE

60 dB Ldn (1986)  
 60 dB Ldn (2010)

**BBA/QUAD**

**EARLIMART**

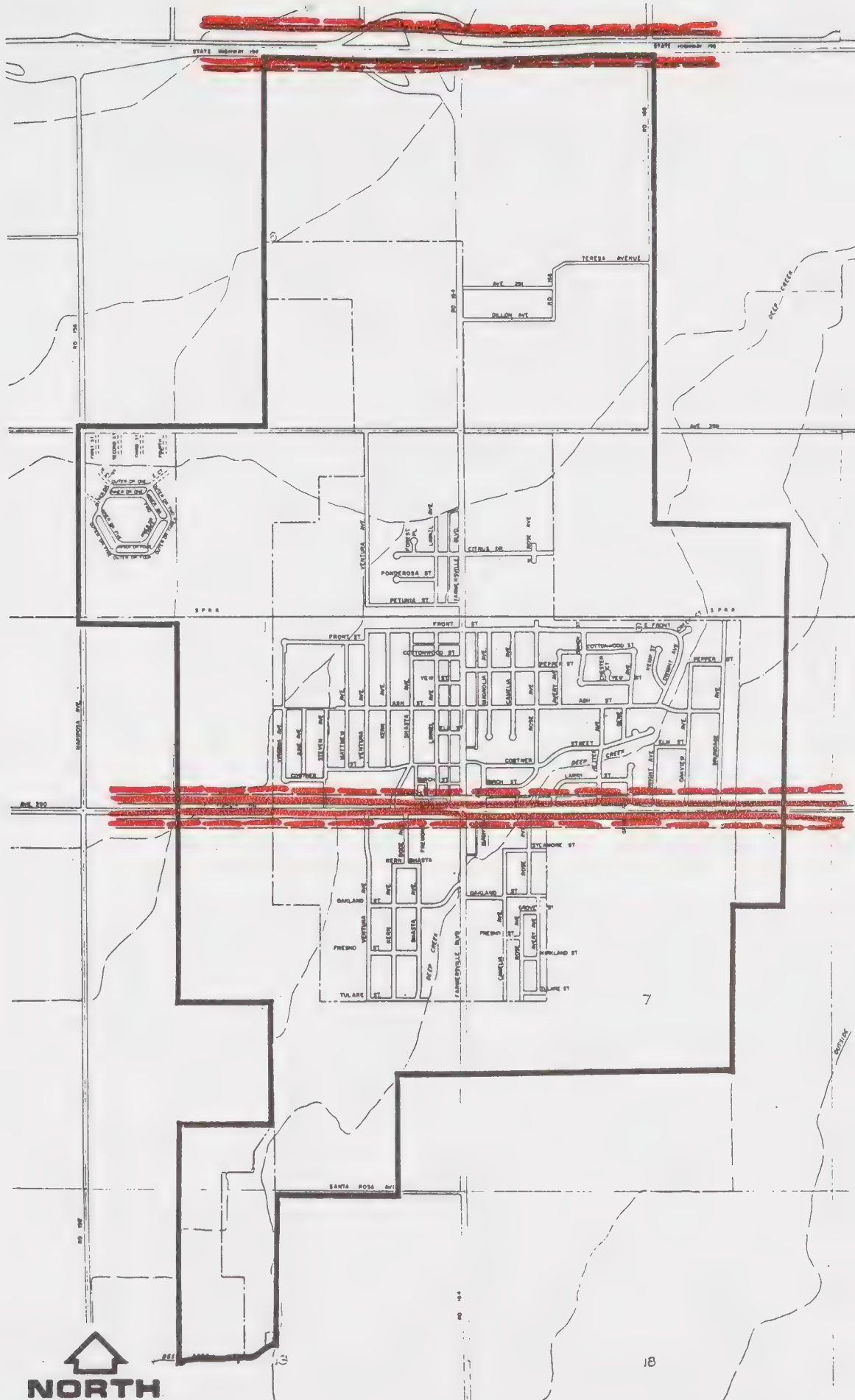
**B-22**











  
**NORTH**  
NOT TO SCALE

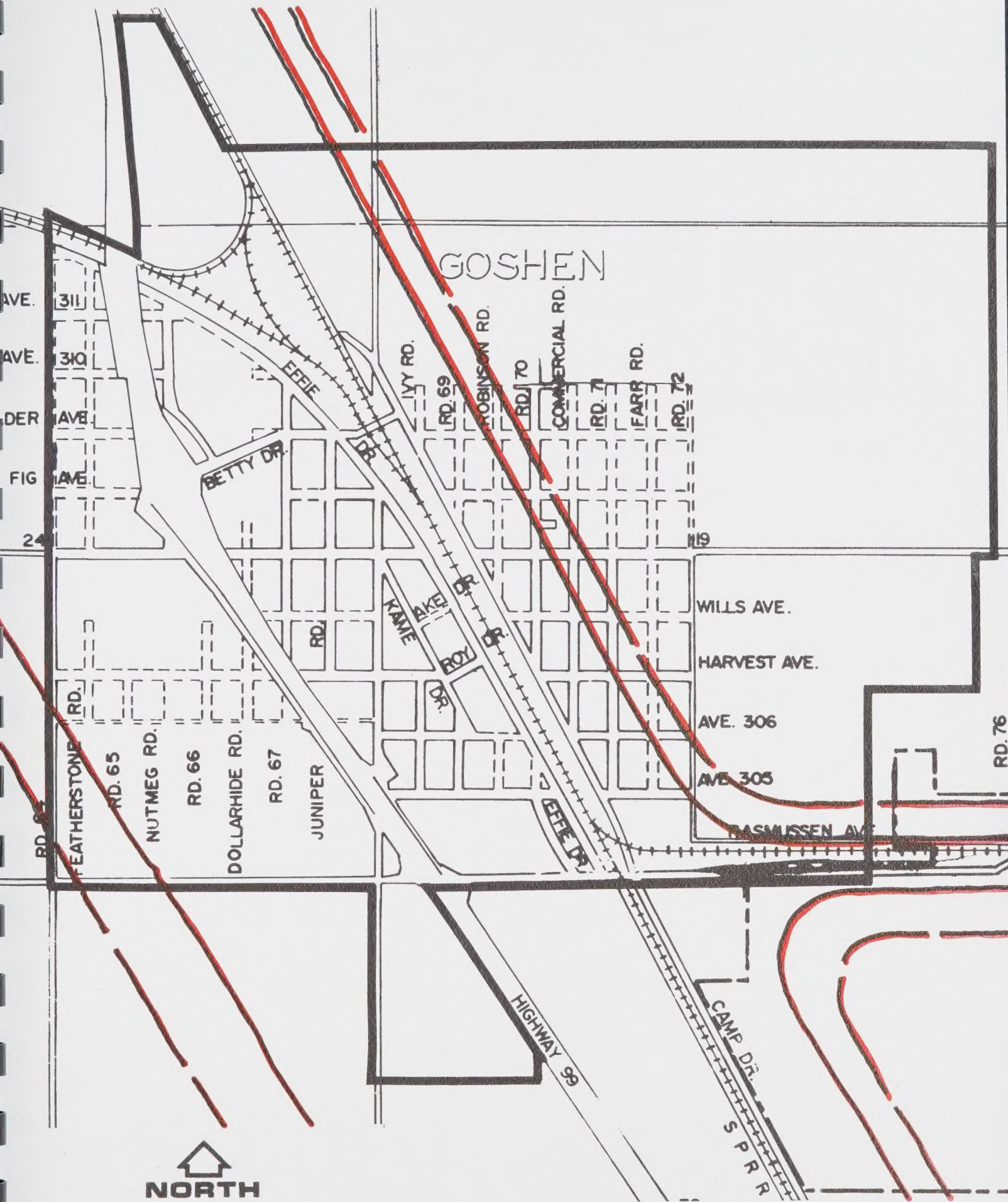
60 dB Ldn (1986)  
60 dB Ldn (2010)

**BBA/QUAD**



**FARMERSVILLE B-24**







  
**NORTH**  
NOT TO SCALE

 60 dB Ldn (1986)  
 60 dB Ldn (2010)

**BBA/QUAD**

**GOSHEN B.25**





U.C. BERKELEY LIBRARIES



C124893758



